

SKIN DIVER

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FEBRUARY

1960

35c

WATER
MANIPULATORS

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UNDERWATER
POLICE

MYSTERY OF
AVE DEL MAR

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REFERENCE
1960 Aquatic Equipment
BUYING GUIDE

the

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THIS SKIN DIVER'S BOARD is more than just a surfboard. The Pescador is a lightweight, rugged and attractive diver's "HOME BASE." Skimming through the water, flying the DIVERS FLAG to the diving area, it has already proven itself a rugged and buoyant companion for champion skin divers.

A NEW MANUFACTURING PROCESS makes it possible to provide a fully sculptured free form board designed for skin diving and surfing at an extremely low price.

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Joe Barbarick
Long Beach, California

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If there is one thing a skindiver needs as he enjoys this great sport, it is room. Yes sir, a skindiver can load himself with more equipment than a landlubber would think possible, and that is where a POWER CAT really shines. Would you believe it . . . the boat pictured above is just an 18-footer, but look at that wide 8 ft. beam and roomy cockpit (64 sq. ft.!!) A POWER CAT carries the load with room to spare. And speed . . . you will get there first in a POWER CAT, the boat that holds more stock boat racing firsts than any other. As for stability . . . climb over the side, stern or bow . . . you will never tip a POWER CAT!

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Letters

Note to all Scuba Air Refill Stations . . . Stolen, one U. S. Divers std. 70 cu. ft. air cylinder with "J" valve. Yellow enamel finish; may have the word Tzimoulis faintly printed close to neck of cylinder. Reg. #45474. If located please contact:

Paul Tzimoulis
14 Hemingway Avenue
East Haven, Conn.
HO 7-0163

. . . I was looking through some old copies of SDM when I saw an article by Ronnie Gann. The article, "Unnecessary Eulogy," in my opinion was very wrong about "younguns."

I am 15 years old and have only been skin diving about a year and I've seen adults who have less brains than many people my age. I intend to get some instruction before using scuba gear, and I think everyone, including adults, should.

I would like to correspond with other divers very much.

Jim Smyers
11216 Nashville Ave.
Whittier, Calif.

. . . Would you please have your experts run an article on the insulating qualities of the "wet" and "dry" type suits. I for one would like to know just how good they are. My 3/16" full wet suit surely helps, but definitely is not a year around rig in this north country, as I have been quite cold already and the lake isn't even frozen yet. Could you tell me what I should wear for winter scuba diving in water of 30 degree temperatures.

I would be interested in an article by Dr. Kirker on the inherent dangers of cold water. I understand they are considerable.

Lorenzo Z. Fletcher, II
Ellsworth Fire Dept.
Ellsworth, Maine

. . . You may be interested to know that since our underwater archaeological expedition to Yugoslavia in 1959 where we surveyed the remains of the sunken city of Epidaurus, as announced in SDM, we have now purchased a larger vessel for our expeditions. "Pagan II" is fully equipped for diving with high capacity compressor (10 bottles per hour), winch, auto pilot, echo sounder, etc.

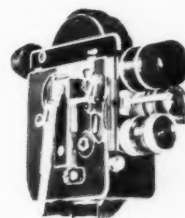
We have decided to charter Pagan II with skipper to groups starting their own expeditions or those merely wanting to have an unfettered camping style diving holiday in the waters of the Mediterranean. There are six bunks below and space for ten to sleep on the deck. Cost of the charter is \$300 per week with everything included except the food. Groups will be taken aboard at Nice and from there will sail to the diving areas. Corsica should be excellent as it is unspoiled for both fishing and archaeological interests.

Ted Falcon
Underwater Explorers Club
428 Fulham Rd., London SW 6
England

(Continued on Page 6)

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• Balanced buoyancy for greatest filming freedom

Compact advanced design makes maneuvering with the Bolex Underwater Housing as simple as swimming. Two side handles assure a firm grip and accurate directing. Perfect buoyancy prevents housing from dragging down or pulling toward surface, with stability and pressure resistance guaranteed to depth of 300 feet. All camera controls are easily used from outside.

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Department SD-2

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(check one)

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_____ Bolex H-8T 8mm camera

... plus the name of the Bolex dealer nearest me.

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No. and Street _____

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SKIN DIVER MAGAZINE

LYNWOOD, CALIFORNIA, U. S. A.

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Underwater World*
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to aid and advance scientific research through
underwater swimming methods; to encourage and
promote all types of activities participated in and
caused by underwater swimming enthusiasts and
to provide an advertising medium for manufac-
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COVER

Illustrating all of the awe-struck exhilaration of
finding lobster with a small light while diving at
night is this outstanding painting by Jack Dudley.
This work was made several years ago and will
undoubtedly bring back to mind the "good old
days" of simple (basic) diving equipment to the
old timers of the subsurface clan.

editorial

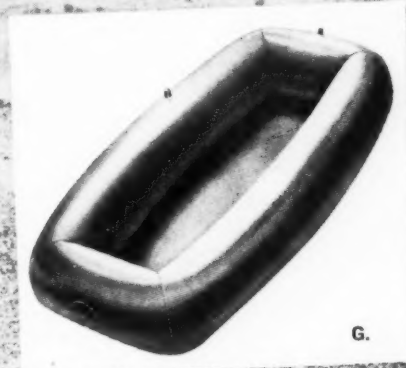
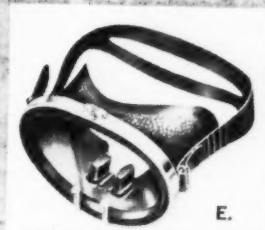
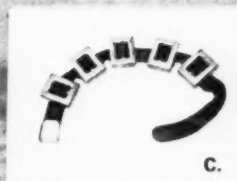
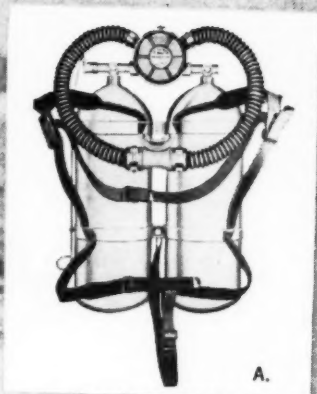
This issue of SDM contains many mentions of the National Sporting
Goods Dealers Association (N.S.G.A.) Show and Convention to be
held in Chicago, Illinois, from January 31 through February 4, 1960.
This great show, convention and exhibition is strictly for dealers, jobbers,
wholesalers, and manufacturers in the sporting goods industry. It is
indeed unfortunate that time and space will not allow the general public
to view this extraordinary show. The industry actually takes over two
hotels, moves the usual hotel furniture out of the rooms and moves in
display counters, racks, complete store facilities and then starts the
game of business men selling to business men. Because SDM is used by
the aquatic industry as their buying guide, catalog, etc., and rightly so,
we have devoted quite a few pages of this February issue to the industry.
We are sure that the readership will be enlightened and will enjoy this
issue . . . and that they will have a greater appreciation of the products
that enable them to enter our favorite of sports, Skin Diving.

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Letters



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... I would like to compliment you on your superb magazine, particularly the persistent and accurate emphasis on diving safety found in "Skin Diver." It is with reference to the most recent article that I would make a few comments.

"The Threshold" by Bev Morgan deals with an intriguing subject to all divers, and one which is not completely understood by physiologists. I found the points well made and the discussion clear, and I agree with the basic point that a well-trained diver can exceed the point at which respiration should be resumed by deliberately suppressing his urge to breathe. There is, however, one incorrect item in this excellent piece, and that is the matter of oxygen uptake of the brain. For all the work it does, and essential as that work may be, the volume of oxygen used by the brain is quite small, as is the amount of fuel burned and carbon dioxide produced. The brain is, however, very sensitive to decreased blood levels of oxygen and increases in carbon dioxide, and this sensitivity is more important than the actual volumes of gases exchanged.

It is the skeletal muscle that uses the greatest share of oxygen, and I could not be more in agreement with the author than in the stressing of relaxation, which dramatically reduces oxygen uptake. We do not relax the brain, but only order the brain to maintain relaxation of muscle. This produces a decreased pulse rate and blood pressure, and accomplishes our aim of diminishing metabolism.

Perhaps this point is trivial, but I am sure that diving physiologists will endorse the substance of the discussion by Bev Morgan; this one most certainly does.

L. S. Van Orden, MD
U. S. Submarine Base
New London, Conn.

... We have been assembling in the U. S. National Museum a documented file on shark attacks, and since this subject must be of very great interest to the readers of your magazine, I am wondering if you would be able to help us to secure documented information of shark attacks.

This project that we are undertaking is supported by contract between the Office of Naval Research and the Smithsonian Institution, and it is for the purpose of possible ways of aiding divers and swimmers in avoiding shark attacks. We hope that your readers can assemble some statistical information that may make it possible to aid divers and swimmers.

We would like to get the following information on all shark attacks (taken from Form 105-R004 . . . victim's name and address, age, sex, date, depth of attack, time of day, temperature (water/air), sun (bright/cloudy), distance from shore, water condition (clean/murky), was victim fully clothed, color of clothing, color of exposed skin (light, tan, dark), occupation of victim, locality of attack, kind of shark, identified by, number of sharks and a complete description of the attack.

Regular forms for filing the above information are available, write for Form #105-R004.

Leonard P. Schultz
Division of Fishes
Museum of Natural History
United States National Museum
Smithsonian Institution
Washington 25, D. C.

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ANYONE WITHIN 100 FEET CAN HEAR YOU TALK UNDERWATER

Scubacom is an underwater communication system resulting from the efforts of Electro-Voice electro-acoustic engineers who became experienced scuba divers to find out what was needed. The loudspeaker compartment straps securely around the air tank and is designed with slightly positive buoyancy to eliminate any awkwardness or entanglements in use. The mask-microphone is designed to fit most standard diving equipment with only minor variations. And best of all, the total price of mask-microphone and loudspeaker is only \$210.00.

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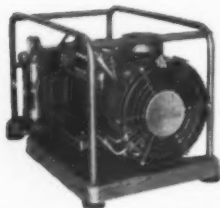
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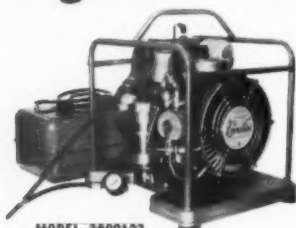


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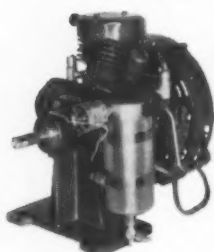
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3 H.P., 220/440 volt, 3 phase, 60 cycle electric motor. Adjustable pressure switch. Motor starter. Recommended for semi or permanent installation. Weight approximately 120 lbs.



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For those who have their own power source. Cast iron bracket, pre-drilled mounting holes. 3/4" keyed shaft for V-belt pulley.

Capacities of all units 4 CFM with pressures up to 3000 PSI. Each fills a 70 cu. ft. tank in less than 18 MINUTES!

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DIVERS' CALENDAR

- | | |
|-----------------------|--|
| January 31-February 4 | NSGA Show, Morrison Hotel & Palmer House, Chicago, Illinois. |
| February 16 | Capt. Jacques-Yves Cousteau lecture. Zoological Society of Florida, Dade County Museum. Tickets available from the Society, P. O. Box 589, Miami 1, Florida. |
| February 21 | Lecture, Capt. Jacques-Yves Cousteau, 8 p.m. Cullen Auditorium, University of Houston, Houston, Texas. Southwest Council of Diving Clubs. |
| March 15 | Close of California lobster season. |
| March 16 | California abalone season opens. |
| March 20 | International Skin Divers meet, Edix Hook, Port Angeles, Wash. Nemgorf Divers. |
| March 22 | Skin diver program of films, short subjects, Manhattan Center, 8:20 p.m., 311 W. 34th, New York City. |
| May 1 | Classification Competition, Greater Los Angeles Council of Diving Clubs, Cabrillo Beach, San Pedro, California. |
| May 15 | Greater Los Angeles Council of Diving Clubs Spearfishing Competition Championships, Salt Creek area, South Laguna, Calif. |
| May 14-20 | First International Treasure Hunt, San Juan, Puerto Rico, Caribe-Aqua Assoc. |
| May 29 | Ohio Competitive Dive, Mansfield. |
| May 22 | Atlantic Skin Diving Council Individual Open Spring Rodeo. |
| June 5 | Pacific Coast Championships (location to be announced). |
| June 18-19 | ASDC Spearfishing Contest. |
| June 26 | National Underwater Spearfishing Championships (location to be announced). |
| August 1-5 | World Underwater Spearfishing Championships, Rome, Italy. |
| August 16-18 | New Orleans-Grand Isle Scuba Divers 1960 International Tournament. |
| August 20 | ASDC Championship Tournament. |
| August 21-22 | Underwater Society of America, first annual convention, Shamrock Hilton Hotel, Houston, Texas. |

COUSTEAU LECTURE SERIES

- | | | |
|-------------|--|--|
| February 19 | New Orleans, La.
Roland Riviere, Chairman
520 No. Rampart
New Orleans, La. | at Loyola University Field House, make plans for the after-lecture dinner in the cafeteria, room for 300 visiting divers to New Orleans. |
| February 21 | Houston, Texas
Cullen Auditorium
University of Houston, 8 p.m.
George Youmans
2412 Times Blvd.
Houston, Texas | |
| February 23 | Dallas, Texas
Roy McDowell
2935 Royal Lane
Dallas, Texas | |
| February 25 | San Francisco, California
Neal Hess, Chairman
c/o William Shea
Box 224
San Carlos, California | |
| February 27 | Seattle, Washington
Gary Keffler
2520 Westlake North
Seattle, Washington | Lou Whittaker
1123 Second Avenue
Seattle, Washington |



Capt. Jacques-Yves Cousteau

Proceeds from these lectures will be donated to charities and to the Underwater Society of America. We suggest that you contact your local diving shops and skin diving clubs for additional information and for the times and locations for these lectures.

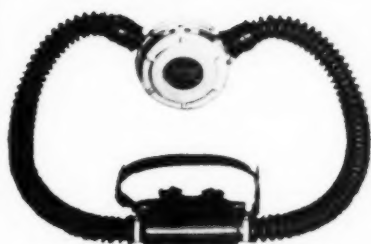
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Letters

... I am a subscriber to SDM and in the December issue there was enclosed a Divers Flag decal. I would like to know if it would be possible to purchase five or six of them for my friends.

Fred H. McMillen
Providence 8, R. I.

(The Divers Flag decal in the December issue was our little Christmas gift to subscribers of the magazine. If more decals are needed we suggest that you contact the various advertisers in SDM selling Divers Flag emblems and stickers.)



... In the November issue of "Skin Diver Magazine" to my great surprise and pleasure you published my article "Holiday In The Florida Keys" and I thank you very much. However, due to some misprint or error the name is Charlotte B. Brown and not Charles. I have also sent you a photo of myself to help the identification. You note in the photo I hold a trophy proudly presented to me by my club, 20 Fathom Club, Lawson YMCA, Chicago, Illinois, as Skin Diver of 1959. It would be my pleasure if you would note a correction of name and the honor my Club has given me in the next issue of "Skin Diver Magazine." You may use the enclosed photograph as you wish.

Charlotte B. Brown
Chairman, Outing Trip Committee
20 Fathom Club, Lawson YMCA

... Due to the fact that our club reporter has changed his job, he couldn't be as active or as accurate as he has been in the past. For this reason there were several mistakes in our club report for the month of December that have caused us problems.

To begin with the article stated that the Toledo Sub-Mariners donated two Dacor lungs. This is a false statement, as the lungs were donated by the Ohio Council of Skin and Scuba Divers.

Second, the article made it sound that the Sub-Mariners were the sponsors of the outing. This also was false, as this was the Ohio Council's first annual dive.

I must say in defense of our reporter that he meant no harm to anyone but, due to the fact that he was overly busy and could not go to this event, he had to go on what he heard from heresy more than the actual facts.

Our apologies to the Ohio Council of Skin and Scuba Divers.

Don Lea Jr.
Toledo Sub-Mariners
Toledo, Ohio

(Continued on Page 14)

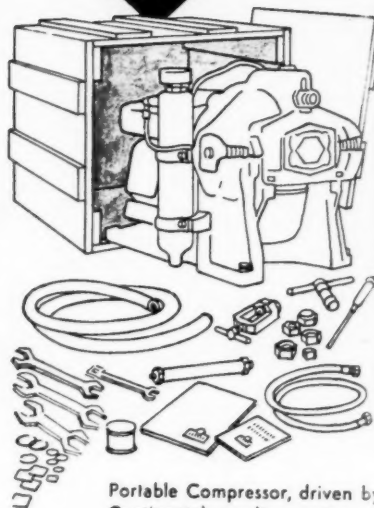
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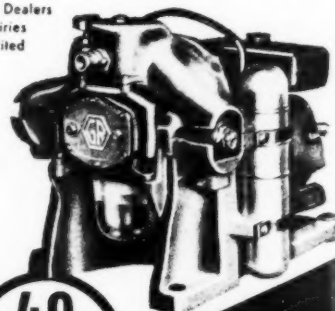
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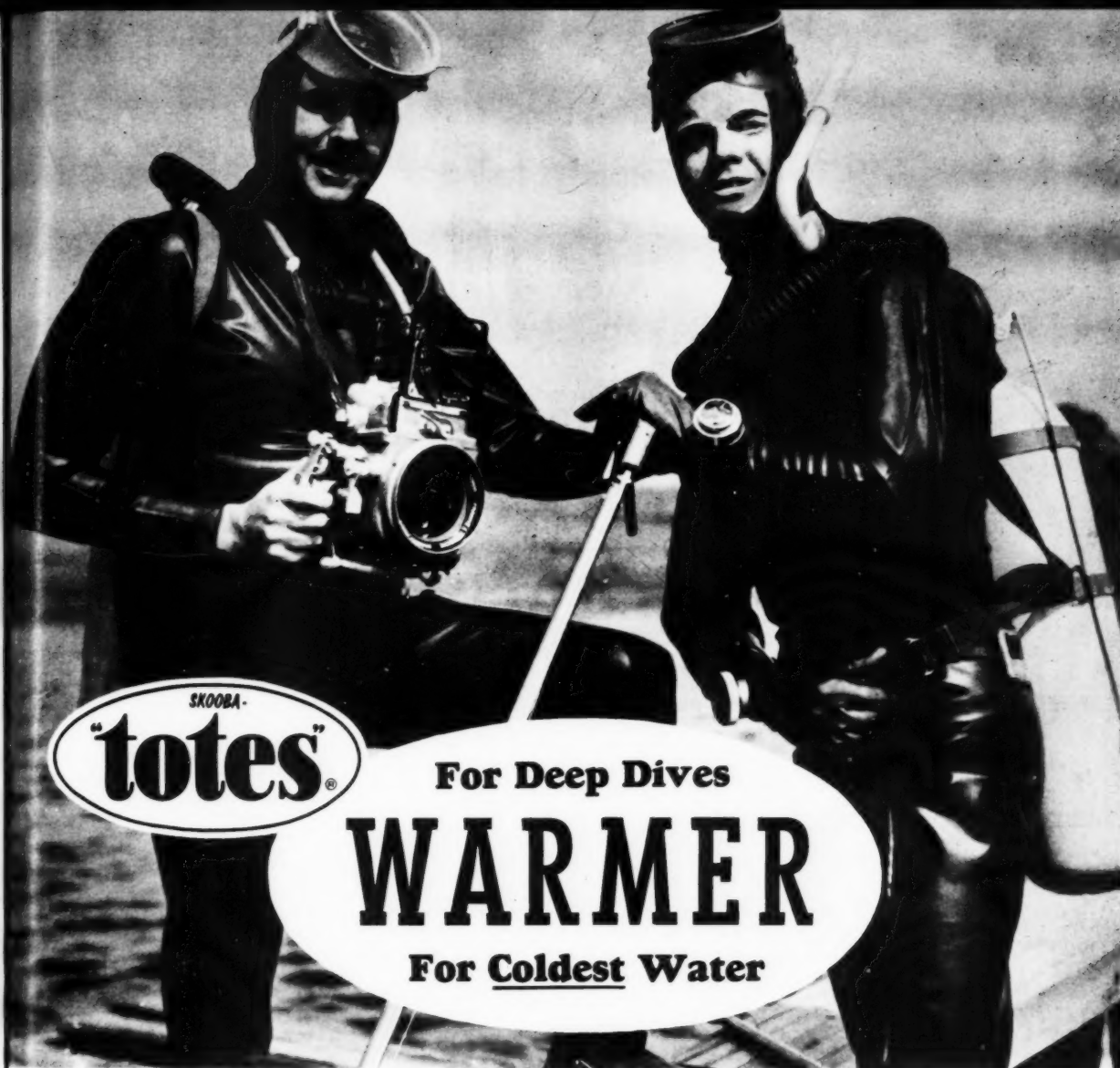
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Letters

... to everyone in the States, in your magazine and to all my diver friends from New England, Florida, California, Cuba and the Caribbean my best wishes for 1960.

Gill Faure

... In the December issue of SDM you said divers are supposed to educate the public as to what the Divers Flag means. I think we must first educate the divers!

Many times last summer while I was on the Detroit River I observed a Divers Flag being displayed when there were no divers "down." This is like crying "wolf" and no one will pay attention to the Divers Flag if this practice continues.

John Calandro
20220 Kingsville
Detroit 36, Mich.

... I've been reading SDM for nearly two years. I enjoy every story. What I have to write about is a danger many divers know of and yet there are many good divers that don't.

I started diving many years ago in fresh water—until July, 1957 I hadn't used scuba. That first dive was in New London, Conn., where I was going to U. S. Navy Submarine School. Since that time I've been in the far east waters aboard the U. S. Navy Submarine Spinax SS 489. Without scuba I dived in Samoa, Fiji, Okinawa and Japan.

I felt as though I was an average diver. On November 28 of last year I found out I wasn't so hot. With a close friend also a member of the Spinax crew, Tom Whyte, I went into the waters off Sunset Cliffs, Calif. The surf was rough, but not too rough for me. I swam out about 100 yards to find that the waves were still breaking. With speargun and full scuba gear I started down only to find visibility zero, so to the surface and further away from the shore. It was now that I found out I wasn't so hot a diver. Fatigue was starting to scare me, the breakers were still tossing me around, so I started back. When swimming on my back the breakers would twist me over all my gear (my lung is a twin 70 by the way). Fighting panic was just as hard as fighting the breakers. I dropped my weights (rented) and found things easier but still hard. About 50 yards off shore the breakers were trying to tie me in a knot. I lost my face mask and dropped speargun on one good roll and finally decided which way was up. On the surf again I removed my lung and started towing it. The next wave set it back on my back. I thought then I was only another story for the SDM news current column. With nothing but fins and suit I made the rocks and lay there for nearly a half hour. My wife and seven-day-old boy were home making out Christmas cards.

I've only this to say . . . if you are an east coast diver or an inland diver and are in Southern California and go to La Jolla or the Orange County beaches, the surf at Sunset Cliffs (San Diego) is for the divers that know and respect this area. I'm sorry to say only two months ago there was an east coast diver drowned at the cliffs because of its rough surf and surge.

I lost a few things that Saturday, but I'm still able to go back down to our wonderful world below the waves.

Clyde Best
San Diego 10, Calif.

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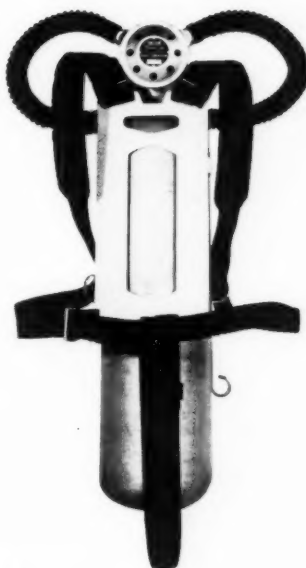
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MINNEAPOLIS OFFERS . . .

SCUBA SPEED CHALLENGE

SCUBA DIVERS from the Minneapolis, Minn., vicinity may never have made the headlines for their achievements in spearfishing, depth diving, or underwater endurance. But a group of experienced and accomplished scuba-addicts from the North Star state are laying claim to being the FASTEST underwater swimmers.

To divers who might dispute this claim while looking for something a little "different" to do during the long winter months, the Minneapolis group issues this challenge:

1. Gather together a mask, fins, scuba and a stop-watch.

2. Head for the nearest swimming pool.

3. At a given signal, jump in and proceed to swim as many lengths of the pool as possible within a timed five-minute period. All swimming must be done entirely beneath the surface while wearing the mask, fins and scuba. You must touch the wall at each end of the pool before turning around and heading back in the other direction.

4. Compare the distance you achieved during the five-minute period with the marks listed below, all belonging to Minneapolis scuba-speed swimmers.

Boys aged 10 and under: Eugene DenBeste, 252 yards.

Boys aged 11 and 12: Ron Solberg, 287 yards.

Boys aged 13 thru 15: George Lehto, 298 yards.

Boys aged 16 thru 20: John Maynard, 321 yards.

Men aged 21 and over: Chuck Hines, 389 yards.

5. If you have bettered or closely approached the mark set by the Minneapolis diver in your appropriate age bracket, send your name, address, distance achieved, club affiliation and the certifying signature by an official of your club to Aquatic Dept., Minneapolis Downtown YMCA, 30 South Ninth St., Minneapolis 2, Minn. Gold medals will be awarded to the best performance in each age division as of July 1, 1960, and a trophy given to the competitor who breaks the men's mark of 389 yards by the greatest margin.

If you don't like to spear fish or are limited by state laws, don't have enough patience to spend a couple days underwater in an endurance test and can't dive to great depths, here's your chance to achieve aquatic stardom as a scuba-speed swimmer.

Any challengers to Minneapolis' claim of being the home of the country's fastest underwater swimmers? ➤

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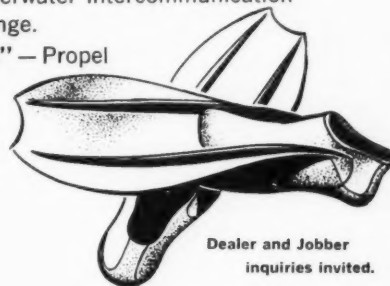
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Personality Spotlight

By CONNIE JOHNSON

Carl Hauber

FIRST PRESIDENT OF
UNDERWATER SOCIETY
OF AMERICA



ILLINOIS is in the national diving spotlight this month as manufacturers, jobbers, dealers and sport minded persons assemble in this windy city for the National Sporting Goods Show.

Therefore SDM's personality of the month, Carl Hauber, is dual deserving as he is both a national figure as president of the Underwater Society of America and a key personality in Illinois council and club diving activity.

Carl became interested in diving in the early forties when the school he was attending featured a lecture by a helmet diver. The tales of wrecks and sharks started the ball rolling and, according to Carl, "it hasn't stopped yet." His first equipment dive was in the summer of 1947. The equipment consisted of a "helmet" made of galvanized iron with air pumped through a garden hose by an auto tire pump. "My wife says that she wishes the darn thing hadn't worked," Carl recalls. "Then maybe I'd spend my evenings studying law and not the Underwater Society of America."

The first president of our national diving society, Carl is very much interested in supplementing midwestern history by underwater search, and reveals his real hobby related to diving is fresh water fish. "It is a little known fact that some of the most beautiful and colorful fish that exist are to be found in muddy mid-west creeks," he said. "Disbelievers should view color pictures of the rainbow darter."

Diving affiliations and accomplishments include handling underwater demolition for the Illinois Underwater Recovery Team, one of the organizers of the Illinois Council and the Underwater Society of America, founder and editor of the "Divers' Delegation" and active with the Greater Rockford Lung Divers (past president), Midwest Flipper Dippers (organizer) and the Illini Aqua Scouts. He was named Illinois Council member of the year in 1958.

Although bogged down with the presidency of an infant organization and other diving activities, Carl manages to dive once or twice a week in the summer and about once a month in the winter.

Preferring lung equipment except when spearfishing he uses a double tank rig almost exclusively. Consequently he feels that his watch is one of the most important pieces of equipment. In exposure suits he likes the quarter inch wet suit and the front entry two ply dry suit for extended dives in cold temperatures.

"By far, the most interesting thing to happen to me underwater was to experience vertigo. It is amazing how one can be-

come so firmly convinced that he is right, that it takes every ounce of his will to admit that he could be wrong. I had gone in search of some diving equipment, lost when a boat swamped. The water was 110 feet deep. It was extremely clear by our standards—about 35 feet. The sun was high and evidently there was some measure of reflection from the bottom, because at about 70 feet, it appeared as if I were swimming in a big yellow ball. No direction was lighter or darker than another. Anyway, I swam and swam and didn't hit bottom. All of a sudden, to my great alarm, I observed my bubbles trailing off almost horizontally, or so I thought. As soon as I convinced myself that bubbles don't go that way and began to swim opposite their direction, I found the bottom and all doubts were erased. The mind plays the strangest of tricks. It is hard to believe that one could actually question the direction of his bubbles."

When questioned about dangers of the deep, Carl replied, "In my humble opinion, the 'dangers' of the depths are not so much in its permanent occupants, such as sharks, eels, whales, etc. The greater danger is that the diver will not recognize his limitations and remain within them. He who exceeds his physical capacity, or his knowledge is in serious danger. He is then his own worst enemy, so to speak."

The 28-year-old diver and father of a four-year-old daughter lists the Florida Keys as his favorite diving location. Career-wise he is studying law at the College of Law, University of Illinois.

Quoting Carl on the Underwater Society of America, "There is only one excuse for the formation of this national society—it was needed. We speak of skin diving as a 'new sport' but it has long since shed its three cornered pants. The whirlwind growth has left some fearsome cracks in the foundation of the sport. Ignorance is the greatest of these. Ignorance breeds ill will in fellow sportsmen, lack of acceptance by the general public, and adverse legislation. People must be offered an opportunity to understand our sport. Competitive opportunities are sadly lacking in the less well established diving areas. National standards are needed in such fields as training and safety. It is no great secret as to how the Society expects to attack these problems. It will simply merge the efforts of all into one great operation. Where one state has failed, another may have the solution. Where all have failed, all will work together for the solution. Each will benefit by the other's experience. The good must be generalized, and the bad culled out. Unity will be the mother of success as necessity is the mother of invention." ■

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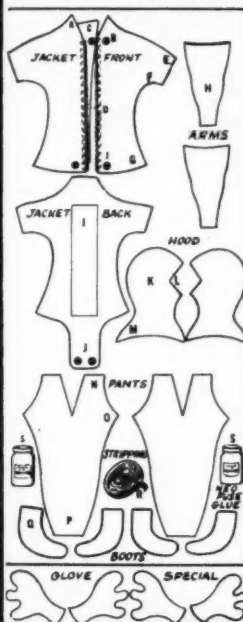
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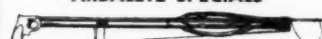


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WATER MANIPULATORS

By NEIL P. RUZIC

Editor and Publisher of
Industrial Research Magazine

Photography
Jim Thomson

A VAST AREA some 47 times larger than the United States exists on earth. Comparatively, it's unused, unexplored. Economically, it's vital to the continued development of this planet. Potentially, it's accessible—much more so than anything in space.

Yet, in reality its atmosphere turns to solid rock in the most important areas during parts of every year. And even where it remains fluid, the "atmosphere" is as unbreathable as the moon's vacuum; its gravity as light as Mars'; its pressure as heavy as Jupiter's.

It is, of course, the 140 million square miles of terrestrial real estate covered with water and ice.

Underwater manipulation, like "planetary" engineering of science fiction, takes place in a completely alien environment, has problems unlike anything on earth, and is rapidly coming up with a whole series of new products and answers for several hitherto neglected markets.

Probably the most significant answer provided by underwater manipulators is to the question, how to keep water liquid in sub-freezing winter at an economically justifiable cost. The problem not only plagues such developments at the \$1 billion St. Lawrence Seaway, but also thousands of harbors, small lakes, rivers, channels, and livestock ponds throughout the northern hemisphere. Year-around water commerce is part of the promise. But also significant is the growing use of small lakes, lagoons, and rivers for commercial and pleasure fishing and for aqua sports.

Liquid Water — At 20 Below

Underwater researchers not only have found out how to keep water from freezing economically—even cheaply—in 20 to 30 below zero weather, but also are developing new piers, aerators, wave control methods, propellers, underwater tools, protection devices, submarine conveyances, and through-the-water "telephones."

These are the engineering developments that must supplement scientific findings if the new underwater technology is to progress. For the first time *en masse*, and largely as a result of IGY explorations, scientists are looking to the seas to solve problems now becoming unsolvable on land or on the water's surface:

- New sources of oil, manganese, cobalt, copper, gold, and other resources.
- Water transportation impervious to storms.
- Undetectable military installations.
- Unlimited (by acreage) farms for both crops and seastock.

The potential is as vast as the imagination.

The story of underwater manipulation is largely the story of a single group of Chicago researchers. It had its beginning only a few years ago in the mind of George F. Gross, then employed in Armour Research Foundation's department of mechanical engineering.

Among other duties, George was safety engineer for research weapons testing at facilities in and near Chicago. This was a role that grew out of his wartime experience in Army Ordnance with rockets, explosives, and fuses. Later it played an important part in underwater detonation experiments.

In spare time Gross was a gadgeteer, following the insights of his problem-solving ability rather than the academic approach of his degree in industrial engineering. When his friend, Herbert J. Johnson, a concrete and swimming pool contractor in Skokie, Ill., told him of his pier problem in Lake Geneva, Wis., Gross had an idea.

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Johnson's pier, an elaborate installation built to hoist a half-dozen speedboats, would cost \$1,200 to take out in the winter and replace in the spring. Repairs incurred in moving would boost the cost even higher.

"Why remove it?" Gross said.

"Ice."

"Is that the only reason?"

Expensive Ice

It was a big reason. It was why thousands like Johnson pay upwards of \$400 a year to dismantle their piers; why the fishing industry and all water commerce in the north cease like clockwork with the first freeze; why whole nations are landlocked in winter.

Ice plays havoc with piers and other water installations. At very low temperatures, expansion alone amounts to as much as 16 inches for every mile of surface ice. Expanding, contracting, cracking, shifting, and floe ice exert 72,000 pounds of pressure per square foot of pier, seawall, or boat house. Anchor ice (ice that forms around objects on the lake floor) clogs inlets to purification and hydroelectric plants—a problem currently solved with dynamite.

Johnson went to Mexico that year, leaving his pier in Gross' care. When he came back in February the pier was still in the water, unharmed. Ice 30 inches thick covered the entire lake—except in a four-foot perimeter around Johnson's pier.

Had Gross heated the water?

No. Water heaters are far too expensive to operate. Gross device, a heat pump, literally lifted the warmer water lying at the bottom of the lake and deposited it on top. Today, his improved models can do this with a few electric motor-power units of less than 1/55th-horsepower each, at an operating cost of two cents a day per unit, or a couple of dollars for the whole season.

Two phenomena made the invention called "Aqua-Therm" (patent pending) possible:

- Water at the bottom of a lake is usually *above* 34° F, even when the air temperature is 30 to 40 *below* zero.

- Warm dense water does not naturally mix with cold light water in a lake. Instead, the two kinds of water lay in separate strata, the cold on top of the warm, like oil over water.

Moving Water Through Water

Water researchers had known these things for years, yet had been unable to reverse the strata conveniently, to place the warm water on top. Why? Because they did not know how to move the only-slightly-warmer water along the bottom through the middle layers without mixing.

Basic to Gross' device is its ability to jet the warmer water through the middle layers and remain unaffected by them.

The first aqua-therm consisted of a long horseshoe-like pipe punctured at calculated distances and extending two-thirds the way around the pier. It rested on the bottom with the holes pointing upward, jetting water in scores of tiny columns. A 250-foot length of downspout pythoned out into the lake, seeking deeper, warmer water. The motor unit, at the center of the horseshoe, acted as a heat pump, drawing comparative heat out of the downspout and also out of the earth itself.

The warm water is driven to the top without becoming diluted on the way up. On the surface, as it tends to freeze, it's replaced with a new layer of warm water. The cycle need not be 100% continuous even in the coldest weather.

Taking the ideal condition for the area—that is, water temperature as the maximum available and full-time

(Continued Next Page)



Johnson's pier, at Lake Geneva, Wisc., sits in a pool of liquid water—in 20 below weather.



The wedge shape at top left is ice—successfully absent from vicinity of pier.

A "pipeless pipe" of milk-dyed water shafts 30 feet to the surface in an aqua-therm experiment. Diameter of the shaft starts at 22 in. at bottom, measures only 30 in. at 24 ft.



operation as 100% efficiency—then the percentage of actual running time, multiplied by the percentage of the maximum water temperature gradient available, yields the operating efficiency of the unit. At 15° below zero, an efficiency of 38% is sufficient to keep ice from forming—provided the on-off cycle is controlled correctly. In practice, this means the aqua-therm need run only about 50% of the time in 15° below weather.

The first aqua-therm was an unwieldy monster compared to today's models. From experiments at Johnson's pier, Gross, William F. Cramer Jr., an Armour senior engineer, and Donald Johnson, son of Herbert Johnson, advanced to far simpler models. Gross left Armour to form a company called Perma-Pier Inc. At the same time, he formed another (not-for-profit) firm, Future Products Research Inc., to research the expanding ideas.

'Pipeless' Piping

First on the list was an aqua-therm that would work without the cumbersome, expensive piping. Gross and Cramer reasoned that if the pump housing were designed correctly, it could tap heat from a lower, warmer layer and eliminate need for the 250-foot downspout. They also felt that a stronger pump could jet a large enough shaft of warm water to make the horseshoe piping unnecessary.

The first theory was correct; the second was not. Water from the many small pipe jets somehow arrived at the top without diluting its warmth in the middle layers. But a single large stream of water direct from the pump didn't do this.

To find out what was happening they needed a dye, an inexpensive, harmless dye. A dye with the same specific gravity as water. Milk. The milk showed the "pipeless pump" merely resulted in a general upflow of water that dispersed and mixed with the cooler water in an ever-widening cone toward the top. The pipe jets, on the other hand, streamed tiny shafts of milk-water that remained undiluted.

The invention that hurdled this obstacle came before the theory that explained it. The water researchers were testing the system last winter in Crystal River and Rainbow Springs, Fla. Gross, while in the boat and with only a pair of pliers, fashioned a new-type propeller for the pump motor. Then he dived to the aqua-therm, installed it, poured in the milk-dye, and turned on the motor. A shaft of milk-whitened water started with a four-inch diameter, quickly expanded to about 18 inches, and stayed at 18 inches on its 30-foot climb to the top!

When properly adjusted, the shaft of water mushrooms when it gets to within 16 inches of the surface. It covers an area 30 feet in diameter, depositing the warmer bottom waters into the necessary oil-like surface layer that prevents freezing. Diagonal shafting, they found—and multiple shafting, using one pump oscillating on a ball and socket to form several streams of water—results in even wider surface coverage.

After inventor Gross made the shaft work, scientist Cramer explained why. His explanations were mathematical and continuous, leading to additional refinements for varied conditions. Generally, Cramer found, the propeller slows down the velocity of water in the middle of the shaft and increases it on the outside, thus forming a "pipe" of water through water. But exactly how the propeller achieves this, plus its design, are secret pending further development.

Since that breakthrough, the water manipulators have devised a number of propellers and horsepower ratios that can yield the desired water jetting and mushrooming effect anywhere from 10 to 40 feet deep. They also have miniaturized the aqua-therm into compact, 1/55th-hp-motor pumps encased in heavy steel shells for shallow depths.

The St. Lawrence In Winter

With these developments the possibility of keeping the 27-foot deep St. Lawrence Seaway open throughout all or part of the winter became evident. In spite of low operating cost, the expense of piping the whole seaway would have been prohibitive.

But with "pipeless piping," larger aqua-therms could be dropped along the entire length of the seaway at an estimated five-year material depreciation cost of \$7,200 per mile of open channel per year. Along the northernmost parts of the seaway, a combination of aqua-therms and some external heat-producing method, possibly radio-isotopes, might be necessary during coldest periods.

Since channels in harbors and rivers can be kept open with wide-spread use of aqua-therms, boats would not have to be taken out of the water in winter. The devices will last at least five to seven years. If they malfunction they're cheaper to replace than repair.

An offshoot of the "pipeless aqua-therm" is the "pipeless aerator." It is simply an aqua-therm outfitted with a snorkel to draw air from above, and a venturi (a neck-down nozzle), through which the air would pass and be broken into fine bubbles. The device creates a steady noise, "like a V-2 taking off," says Gross. The noise vibrations, which were recorded on tape, attract fish, incidentally. The bubbles of air keep them attracted.

Killing 'Winter Kill'

Use of the pipeless aqua-therm, in addition to keeping lakes and harbors open in winter, would help solve the multi-million-dollar scourge of fish farmers, sportsmen, and hatcheries—"winter kill." If winter kill could be partly prevented with an aqua-therm, why not use the aerator to completely end winter kill as well as "summer kill?"

These terms describe conditions in which whole fish populations suffocate because of lack of oxygen-bearing air in the water. Winter kill occurs when a blanket of ice prevents air from dissolving in the water. A lack of sunlight intensifies the problem because it causes plants to decay, thus using up what little oxygen remains.

Summer kill, which results from very hot weather and low-wave activity, suffocates fish because warm water holds less oxygen. Yet, Gross knew, the warmer the water the faster fish will grow—provided there is a high degree of oxygen in the water.

Aeration systems are in current use. But these conventional devices use pipe distributors that limit their versatility and increase expense. Gross' unit, utilizing the propeller he invented in place of a venturi, can aerate more than 100,000 cubic feet in about an hour.

The secret of its effectiveness is the smallness of the bubbles and the horizontal flow created by the propeller. In operation, fine bubbles are stripped off the air intakes, emulsified, and driven in a horizontal shaft along the bottom. Some of the fine bubbles lump together and form larger bubbles more than 1/64-inch diameter. These rise to the surface as a curtain of bubbles within 15 to 20 feet from the unit, creating a vertical circulation pattern. But the most important, dust-sized bubbles continue horizontally, clinging to objects and distributing themselves over a large area.

The pipeless aerator can be dropped through a hole in ice to prevent winter kill much more economically than keeping the entire lake from freezing all winter. In summer it can be used during hot weather as required.

Wave Control

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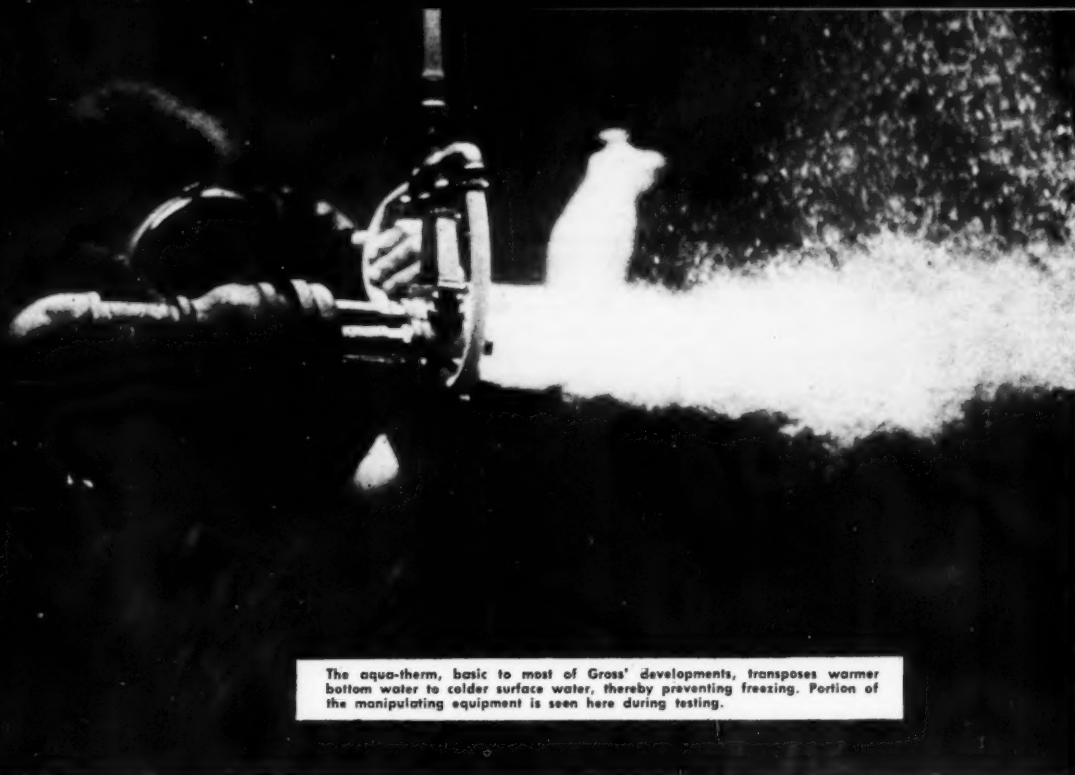
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The aqua-therm, basic to most of Gross' developments, transposes warmer bottom water to colder surface water, thereby preventing freezing. Portion of the manipulating equipment is seen here during testing.

ible change was made in surface wave patterns. A number of tests were made and a principle—of wave control—established.

Recently the British announced a \$6 million bubbler installation at Dover, England to control waves and prevent ship damage in close maneuvering, docking, and mooring. It was true that the bubbles did tend to shorten waves, but the shaft of water from a modified aqua-therm should work much better.

Explains Gross:

"Why use an indirect method (bubbles) when you can do it directly with a shaft of water? It doesn't take much force to knock down a wave if the shaft is aimed in the right place."

Further experiments at Lake Geneva revealed that 18-inch waves on one side of a relatively small aqua-therm were significantly eliminated on the other side. At least three applications immediately leap to the mind:

- To prevent shore damage without costly seawalls.
- To eliminate undertows on bathing beaches.
- To facilitate military landing craft—a problem so severe in World War II that hundreds of ships were sunk deliberately just to form breakwaters.

'Ductless' Ducting

Some interest is beginning to be shown in Gross' new propeller for other applications: to move air, instead of water, in a shaft ("ductless ducting") to save the expense of duct-work on warm-air heating systems; to propel boats rocket-fashion with an efficient, high-thrust stream of water.

The success of the propeller and pipeless aqua-therm also smooths the way for new pier designs. For instance, the Fibrecrete Corp., Long Beach, Calif., has a modern economical floating pier, which because of its light concrete construction would have difficulty in northern climates during winter.

Gross and his Perma-Pier company want to enter the pier business too. They have ideas for piers that would work on large lakes or in the Arctic, piers that will be protected not only from "static" ice, but also floe ice.

Another pier they plan would cantilever out from center posts for easier hoisting of boats, safer slides for children, and a more modern appearance. Such designs have not been popular in the past because, when a pier has to be removed every year, nothing beats the ten-thousand-year-old post pier. Nothing, that is, except the aqua-therm.

That the aqua-therm really works under actual commercial conditions has been proven several times. The Rahr Malting Co., in Manitowoc, Wisc., wanted an aqua-therm to thaw a 30-inch crust of ice on one of its ponds. The underwater engineers, working through their Perma-Pier corporation, designed a unit for the job and shipped it with instructions to cut a hole in the ice, drop it in, wait two days, and observe a 20-foot clearing.

The Rahr Co.'s trial of the unit was also its first test. In two days, a 20-foot liquid crater appeared in the ice.

Similar successes resulted in a flood of orders—most of which remain unfilled for two reasons. Last February, Herbert Johnson, one of the original trio, was installing a new tile floor in the Perma-Pier office. He had spread mastic over the entire floor and was laying the first tile when the flame from a gas hot-water heater ignited the mastic fumes. The building went up in flames instantly. Johnson was burned to death.

Johnson's death and the loss of the office building was a business as well as a deep personal tragedy that set the researchers back several months. Fortunately, Johnson's son, Don, was able to take over his father's interest in the corporation. Fortunately, they were also able to rebuild the workshop-research laboratory, and now have a complete shop with large testing tanks.

The other reason for the backlog of unfilled orders is that every new accomplishment begets new information, new processes, and new patent applications—the excitement of research.

There is another excitement in this business also. Gross and his partners had taken up skin diving as a necessity, but it quickly became an area for discovery and invention

(Continued on Page 68)

MY BUSINESS keeps me in the water on an average of several thousand hours a year and consequently I see a great number of Barracuda and sharks. However, most of the Cuda are between three and four feet and occasionally I see a five or six foot specimen. But one time, I saw a monster that would go easily over eight feet in length!

At the time, we were diving on a relatively shallow reef about five or six miles off shore down in the Florida Keys. I was collecting marine fish and specimens while my companion, Rick Fried, was shooting a few grouper for the table. It was during the winter and the water was not very clear. I had brought some colorful fish back to the boat and picked up a Hawaiian Sling to shoot a huge Hog Snapper I had seen near by. It was a large reef and the water was quite choppy, so I couldn't see my friend for some time. When I finally caught up with him, he shouted something about a giant Cuda and quickly submerged.

I didn't pay much attention to him at the time as every Cuda over five feet is usually called a giant and sometimes they look twice that big under certain light. The water was cold and my legs were cramping, so I didn't even look be-

hind me as I normally do. I couldn't locate the big hog snapper I had seen, so I shot a nice size grouper instead and flung him into my basket. Then I saw it! Out of the gloom straight towards me emerged the biggest head of any Barracuda I had ever seen!

It was monstrous! The fish was so big that I couldn't see the end of him in the dirty water and his mouth was opened revealing tremendous fangs that were at least several inches long. The head of the creature was three or four times as large as any Cuda I had ever encountered and I have seen between twenty and fifty thousand of the fish during my career as a full time marine collector.

I swam along slowly more or less in circles, now, I kept looking around so that I could keep the fish in view at all times. This fish was easily big enough to cut a man in two with one bite. The head of the giant fish was specially frightening for the eyes were huge and looked to be as large as saucers and the hard bony appearance of the skull gave the fish an armor appearance. Then I noticed my friend Rick swimming up ahead. He was now catching crawfish. The huge Cuda was swimming right around him in fast, vicious circles and he never noticed it in the gloomy water.

I was able to accurately gauge the size of the fish by comparing it to Rick as it swam close to him. It was nearly a third larger than he and was about sixteen to twenty inches in girth. I finally hollered to Rick underwater through my mouthpiece and he looked up and saw the big fish who was getting braver by the minute. We both stopped spearfishing after that as we figured there was no sense in pushing our luck.

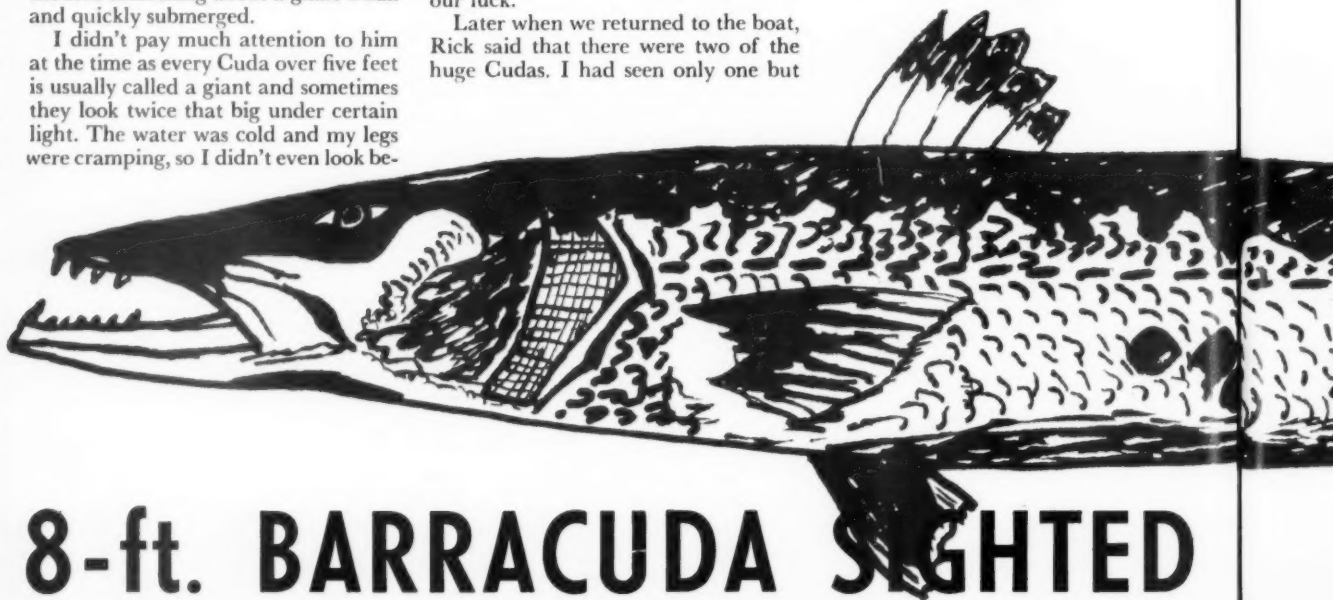
Later when we returned to the boat, Rick said that there were two of the huge Cudas. I had seen only one but

most likely I had seen them both only one at a time due to the dirty water. Large Cuda very often travel in pairs and probably mate for life. I am quite certain that if one of these fish were attacked, the other would certainly do battle with the offender.

The usual size of Barracuda here in Florida as stated earlier, is between three and four feet. They are very common. In winter time they congregate in tremendous numbers out on the outside reefs near the edge of the Gulf Stream. It is a common sight to see hundreds, sometimes thousands at one time. They are most likely soaking up the warm water from the Gulf Stream for in the winter months, the inshore waters often become too cold for them. Also, some may be spawning or perhaps choosing a mate.

At any rate, they are not a serious threat to a skin diver unless he molests them. Of course they will usually swim madly at you as you approach their area and it is a little un-nerving to have a hundred or more big fish swimming rapidly towards you. They will snap their jaws and shake their heads but will stop a few feet away. (You hope). I have encountered countless thousands of Barracuda under all types of conditions from shallow water a foot or two deep down to the hundred foot level and in eighteen years of skin diving, I have only been attacked twice. It might be interesting to note here that both fish were very small, under three feet.

It seems the younger fish go off "half cocked" and attack without any forethought. I have also found this to be true of sharks. Of course the bigger fish may occasionally grab you but they are much more wary and cautious.



8-ft. BARRACUDA SIGHTED

Most of the unprovoked Cuda attacks on bathers in this area have been with small fish and occurred in dirty water or in shallow water in which the bather was walking along skipping his hand along the surface. To a young inexperienced fish, this looks surprisingly like a tempting meal. Of course large fish will quickly bite you if you jam a spear into them and then get in the way. They are only protecting themselves.

I nearly always dive alone and since I do, I am especially cautious. When a Cuda approaches me underwater, I always try to keep my eye on it. If its a small one, I usually scare it away but if its a big fellow over four or five feet long, I have learned that they don't scare so easily. I have thrown rocks at some big fellows on and off all day and still they would be swimming around me at the end of the day.

This usually makes me nervous because I figure that at some time of the day, the fish is bound to get hungry and I just might make some special movement of my arms or leg that could reflect the light properly and provoke an attack. I have seen many Cuda feed underwater and the speed at which they travel is phenomenal.

I once saw a four foot Cuda attack a little Cubbyu or High Hat under a small coral head. I saw the Cubbyu swim out from the ledge a few inches and in the same instant the Cuda was there licking his chops. A few seconds later, a cloud of mud rose from the bottom where the attack had occurred. It happened so fast it hardly registered on my mind and I wondered how the

Cuda could possibly make such a lightning rush at the bottom and yet not crash into the coral. When the mud had cleared, I carefully looked under the coral head and the Cubbyu was gone. The Cuda had grabbed him in the fraction of a second he swam out from the protecting coral, yet the Cuda was a good fifteen feet away before the attack.

Some authorities recommend leaving the water when a Cuda appears but if I did this, I would never be able to skin dive as I see so many. I do leave the water occasionally when a very large shark hangs around too long or a six foot green moray eel swims up from the bottom after me. When this happens, I usually move to another area. When you dive alone, you would be surprised how timid you become when a big deep sea predator swims around you. You feel mighty puny. When the big fish darts by you so fast you can scarcely see him and when you feel the powerful wake of his body twirl you through the water you quickly get the idea that these fellows play for keeps and its their ocean.

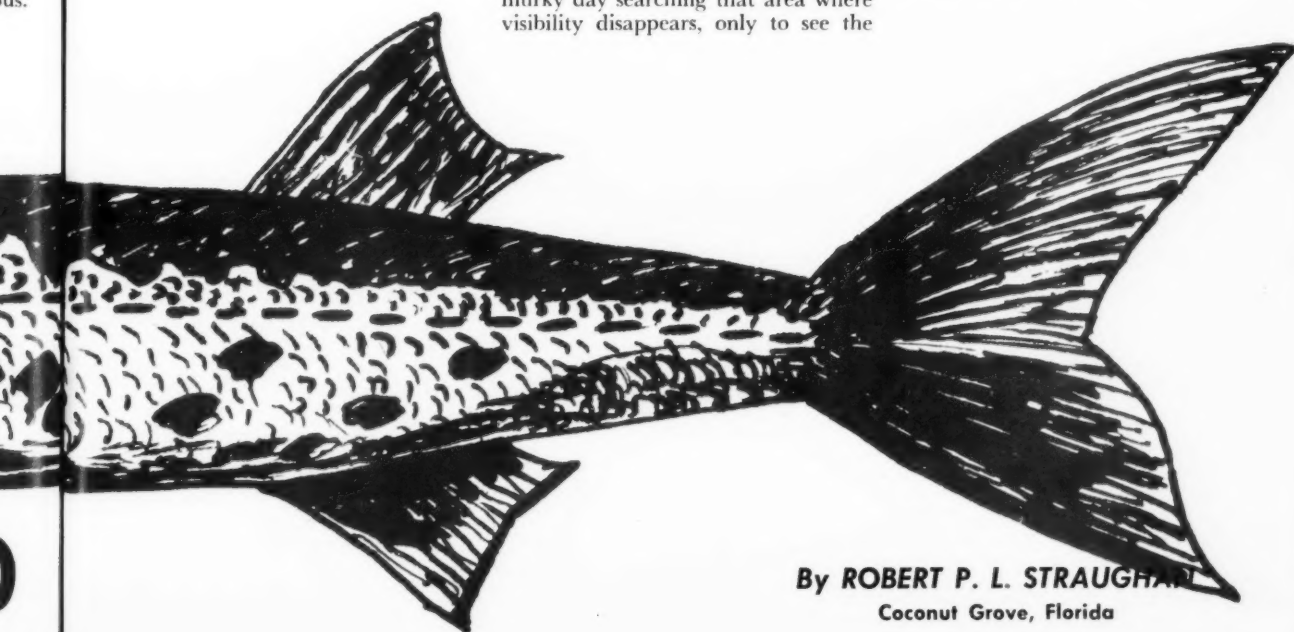
Just because you don't see any Barracuda or other dangerous fish around, don't think you are extra lucky. Big fish often swim around a skin diver half the day and he never sees them. This is because they swim just outside your range of vision. They will circle you at a distance and their body will blend so well with the water that they will be nearly invisible. Only the eye can be seen and even this is very subdued. This is especially true on sunless days when the water has very little contrast.

I often think of how many times I have strained my eyes on a particularly murky day searching that area where visibility disappears, only to see the

extremely faint outline of a big hammerhead shark that had probably been following me for hours. Cudas are the same way. I took one fellow diving and at the end of the day he was telling me that its a good thing he didn't see any Barracuda as he was deathly afraid of them. When I told him that a four or five foot Cuda had been swimming within six feet of him most of the day he thought I was joking, yet the big fish certainly was there. Like many novice skin divers he was so engrossed with the wonders of the reef about him that he never even saw the huge fish.

Barracuda are extremely plentiful down in the Florida Keys. If you skin dive there, don't wear any bright metallic ornaments like shiny belt buckles, wrist watches, stainless steel unsheathed knives etc. Cudas will occasionally grab at these objects and they might take a part of you with it.

One time I was carrying a foot long piece of galvanized pipe in the water as a shark protector and urchin prober and as I was swimming up from the bottom, a Cuda snatched it right out of my hands. When his teeth sank into the hard metal the noise was ear splitting and I am certain he either broke his jaw or suffered a severe toothache. I was fortunate I didn't lose an arm. I have also been grabbed twice by the belt buckle but both times it was by big eighty to hundred pound amberjacks. Had it been Cudas they would have slashed me badly but since the powerful jacks have poorly developed teeth, I only got all "shook up". I learned my lesson though. I sure would hate to get grabbed by the belt buckle by that big eight foot Barracuda. That would not be funny.



By ROBERT P. L. STRAUGHAN
Coconut Grove, Florida

DRIFTWOOD

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Lynwood, California



Hello, you motly types.

While this month's incoming tide of neurotic comment is certainly a very decent cross-section of the kind of thinking to be found behind almost every malcontent's sullen facade, I have been considerably saddened by the lack of good photos lately. Photos, that is, of toothsome wenches. Perhaps I am simply a lecherous old man whose intense appreciation of shapely dolls is a singular talent not shared by the gung-ho dullards who condescend to eyeing this haven for unrepentant rebels, but I say Driftwood just isn't Driftwood without numerous pictures of curvy hoydens. And you know what you can do with your photographs of sleek fish, don't you? Until the coffee comes to a boil you may scan this current crop of dissention while I check the old jetty for signs of dry-rot . . .

This isn't to say I never read *Driftwood*, because I do. However, I missed a nefarious remark you made in the October '58 issue. My new wife, Fran (I finally got hooked), was thumbing through my back issues of the DIVER and came across your column. She greeted me with loaded arbalette (Mickey Mouse, but deadly) and snarled: "Big league, eh? Thinking of girls all the time, eh? Playboy, eh? You and Kohler and Ben Alexander, eh?" I hastily explained that I had merely submitted some photos of babes to you, as an innocent, enjoyable pastime. Kohler, from now on my photography will be strictly concerned with underwater scenery—or my good looking wife. You might call this the demise of a playboy—but I'll never admit to being one.

DON MORRISON
Santa Ana, California

That's the First Rule For Savvy Husbands: Don't Never Admit to Nothing.

I recently wasted my money on your magazine for a 2-year subscription. I feel I should get my 2-cents worth in. I was delighted to see pictures of the old sea monster himself, suitable for target practice. Along with other people, interested in sanitation improvements, I gleefully made quick work of them. Somehow, I don't believe his name is really Carl Kohler (how, in heaven's name, do you pronounce it—or do you?). Anyway, I thank you for the swell decal of the Divers Flag (although it could do without the free advertising). Mainly, I'm writing in regard to the article, "Massachusetts Anchor." In the December issue, it states that the ship *Granite State* was formally named the *Alabama*. I wonder if this is the same ship of the Confederate Navy that was so famous in the Southern States during the Civil War. She was the sister ship of the *Florida* and both were captured and sunk. In closing, what can The League To Dispose of Carl Kohler do to have him committed to the funny farm?

ERIC BRANDSEMA
Brookline, Massachusetts

This kind of action takes money. Send money to the League's president (me) in care of this hairy-chested journal.

I've been quietly reading *Driftwood* for quite sometime now and this is my first letter. It's obvious that the people who write in—excluding intelligent individuals such as myself—are sick examples of humanity indeed. Kohler seems to maintain a strange rapport with lonely, frustrated housewives, pimply-faced adolescents and simple-minded, weight-lifting types. Personally, I get a very large charge out of the whole mess. The snide replies aren't half as entertaining as the amusingly stupid letters which plead for snide replies. If nothing else, *Driftwood* proves people like to suffer—and will actually take the trouble to write letters in order to invite suffering. This is highly interesting to me since I am studying Psychology with the intent of, some day, treating some of these maladjusted people. Consequently, *Driftwood* is practically providing me with an additional course in the strange behavior of neurotics. You might be interested to know that I am a competent skin diver, reasonably attractive and somewhat inclined along literary lines.

WANDA THOMPSON, B.S.
Yonkers, New York

Do those letters after your name stand for what I think they stand for?

What's all this "Verse Island" jazz? What kind of coffee are you brewing on the old jetty—espresso?

PETE RUGHEIMER
Clemson, South Carolina

You a Lipton's man, dad?

For gosh sake, put the Verse Island bit down the tubes and use the reclaimed space for more wild letters from readers. I'm positive there must be many, like me, who are bored beyond description by all this second-rate verse you've been featuring.

STAN LEHMANN
Chicago, Illinois

Verse Island is no more. Happy?

I feel that the main purpose of SKIN DIVER is to distribute diving information. I'm the only diver in my area and I've received invaluable information from reading your magazine and have learned a great deal. But—let's keep it a diving magazine and not a sex magazine! I'm referring to pages 34 and 35 of the October '59 issue. If the divers who wanted these pictures are more interested in them than in diving—they're reading the wrong kind of magazine. I will say that if the majority wants a Beach-Temptress Contest, let's only have the winner pictured after this.

JOHN GILMORE
Fairmont, Minnesota

When you are old enough to fully appreciate this sort of thing, you'll feel differently. Meanwhile, keep right on diving and leave the photos of fetching fems for hasbeen-playboys like Don Morrison, Ben Alexander, Bill Hogan, Eric Rickman and me, eh.

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I have now read three issues of SDM and all I can get from *Driftwood* is that you need a better photographer, and you apparently think the woman's place is in the home, not on the bottom of the ocean. I'm a radio announcer, not a skin diver, so please excuse me for being stupid.

DALE SWIA TEK
Radio KUOA
Siloam Springs, Arkansas

Well . . . all right . . . you're excused.

I'm so damned mad that if you were within reach, I'd be awfully tempted to pinch your head. I'm referring to my sensible inquiry in the December '59 *Driftwood* and your sickening reply therein.

QUENTIN SORENSON
Carlisle, Pennsylvania

Well . . . you helped me.

I haven't been in this area for very long and I don't know a soul. I'm writing in hopes you will print my letter and address. I'm looking for an experienced diver who would be willing to put up with me—and I would welcome word from anyone. I hate to admit it, but I have never been diving in my life. I learned how in Los Angeles, but everyone I know is not much of a swimmer. My interest in diving is purely a photographic one. If there is anyone willing, I'll be around.

BOB EYRSE
Apartment 210
601 O'Farrell Street
San Francisco, California

My interest in diving is purely photographic, too, Bob. Got any good pix of sexy wenches?

A friend of mine tells me that you were in the *Gas House*, recently. She recognized you from your picture in *Driftwood*. Were you after material for a book or were you simply rubbernecking like other visitors from Cubesville? I'll bet you're afraid to let your readers know that you frequent beat coffee houses in your sparetime! How I wish I'd been there that night! I'd have given you an awful hard time for knocking the beats!

DEENA ELLEN JONES
Venice West, California

You couldn't have given me any harder a time than that wretched coffee did, beat-sweets mine. No wonder those truth seekers look so haggard.

Our club has a complaint against those to whom the "shoe fits, let it hurt," or should I say those who call themselves divers. We are speaking of those lone individuals who—making themselves very obnoxious, loud, rude and boisterous—paddle around in local waters, falsely representing themselves as "club members" of a well-known and highly respected club and making themselves a danger to swimmers. Our Pittsburgh *Channel Cats* club has built a fine reputation and, as divers, we have worked hard to maintain this reputation. Yet, this past summer, we made a club dive at a local lake only to find it had been closed permanently to all forms of skin and scuba diving. The reason being that a few knuckleheads—representing themselves as *Channel Cats*—had been there previously and had made themselves very unwelcome to the cottage owners and lake enthusiasts.

CHARLES H. SCHIVLEY
Pittsburgh Channel Cats
Pittsburgh, Pennsylvania

Oh, urchin-glop. If your club enjoys such a magnificent reputation, why couldn't you convince the cottage owners your angelic group had no part in the trouble created? Perhaps you should grill the membership for the culprits. Why would a lone diver want to claim membership in your club if it were not true? Urchin-glop, I say.

Kohler, I get the strong impression that you are not particularly in favor of organized skin diving. Furthermore, I hear you regard clubs as being so-much nonsense. I find this strange, indeed, if true, since you obviously have been in favor of skin diving for a long, long time. Would you explain this for me—and others?

JANET MARLOWE
San Diego, California

Contrary to fond illusions otherwise, organized skin diving clubs have done absolutely nothing to improve the individual's enjoyment of the sport. Diving remains, despite all the pontific titles and societies and movements, a sport wherein you either dig the bit or you don't. I do not decry organized diving for the sheep who prefer to huddle happily beneath club symbols, but I have not forgotten the importance of the individual diver without whom skin diving would never have been possible in the first place.



SHIRLEY HART—Miss International Beach-Temptress—spends her leisure time on the beach, with her favorite man-type, enjoying the fruits of her success as the winner of the Skin Diver Magazine "Driftwood" beauty contest. Shirley received one hundred and fifty frog-skins worth of goodies, among them the chess set in the above pic. Full details on the next contest are not yet ready to be announced, but you gals and photos start planning now for that "just right" day on the summer beach for that winning picture.—Photograph by Richard B. Korbacher.

Enclosed you will find the report of a recent attempt of ours to approach systematically the problems of breath holding after normal breathing of oxygen and after hyperventilation with oxygen. This study was motivated by occasional newspaper reports of skin divers who attempted similar maneuvers. Although this method may seem rather attractive to those who want to hold their breath underwater for considerable periods of time, it is not suggested that it be used for endurance records since certain hazards may be connected with the use of oxygen, particularly when actively swimming underwater.

HERMANN RAHN
University of Buffalo
Buffalo, New York

Your paper is a veritable gasser, Herm. Most interesting. My understanding of physiological theory and terms allowed me but the sketchiest comprehension of your investigation, but I managed to follow the comparative-charts sufficiently to enjoy the assumptions being drawn from the math involved.

I don't know if my problem is a new one to you or not, but my buddies tell me that sometimes you offer advice to guys who are having difficulties with their wives as far as this matter of going on diving trips is concerned. In my case, the little woman says my love of diving is "juvenile" and something I should've "outgrown years ago." My buddies are planning a week's trip into Mexican waters and my wife says I have to choose between the trip and her. Worse, I don't think the gal's kidding, either. What do you think I should do? I sure don't want to have a brass-ring put in my nose this early in the game. We've been married a little over four months now.

GREG PATTERSON
San Luis Obispo, California

Take your cue from your buddies. If THEY'RE married and THEY'RE going on that week's outing, you're being bluffed. . . . and how did you like them beans of outcry and maundering? If nothing else, this little sandbar of eloquent philosophies proves that humanity is still successfully eluding all brands of logic and dignity. Long may they rave. Unless you have a thing about showing up in public with naked feet and your opinions glowing naturally in the sunlight I shall expect you, out here on the old jetty with the rest of us torpid screwballs, next month.

CARL KOHLER & COHORTS, INC.

report and photography
By E. M. "BABS" JONES

An annual affair
that creates fun
for all

MALIBU SURF

Above—rubber shirted
sailors whiz over the
surf in the sail race.
Event was won by Don
Gearheart and his
daughter Janis.

16-yr.-old Johnie Fain
won the Junior Surf
Paddle Race and was the
youngest of the three
top California surfers to
join the Hawaiian Surf
Festival for 1959.

MALIBU has been looking forward to an event like this for many years . . . the first Malibu Surf Festival . . . held August 30, 1959. Staged at Jan and Tom Flaherty's Skin and Scuba shop on Pacific Coast Highway . . . the Flahertys, Pat Ahern of Chris Craft Boats and the Malibu Township Council presented the event and there was a sensational turn out of well-known water enthusiasts.

As early as 7:30 a.m. the coast highway was filled with cars and people anxiously waiting with spearfishing gear to participate in the first event . . . open skin diving . . . after the participants signed up at the shop Jan perched atop a ladder outside, explained the rules, and signaled the start . . . 9 a.m.

After the go signal, it was exciting seeing the people scattering and running to their cars to speed to their favorite spot along the Malibu coastline for underwater spearfishing . . . and return by 1 p.m. with high hopes of being the winning team and receiving the trophy from "Miss Malibu," Alicia Mowar, Queen of the Festival.

Lucky spearfishing winners were popular and well-known Long Beach Neptunes . . . Bob Weaver, Shaw and Manicki . . . catch 141¾ lbs. The Kelptomaniacs came 2nd . . . Keith Lunden, Harold Hundson, Ken Swan and Cliff Dietch . . . catch 103¼ lbs. Ken Swan alone speared 67 lbs, winning the men's individual aggregate. Sea Lancers were third . . . Cortazzer, Schreiber, Lambay.

The Women's Long Beach Neptunes . . . Marcia Rowland and Marjorie Williams . . . winners; women's Kelptomaniacs . . . Dee Wittke, Colleen Graham . . . 2d place.

Continuing into other events . . . men and women's rough water swim, surf, paddle, and sailing race, a 17 mile unlimited paddle board race. The latter event was won by Jim Mollica, Bill Bragg second, and Jim Piper third. Finally at the dark of the evening . . . 8 p.m. . . the exciting County Life Guard Relay Race . . . winners, Zuma Beach. It was a full and successful water sports day . . . and we are all looking forward with pleasure to the 2nd annual Malibu Surf Festival this year.



Senior group of Surf Board Paddlers head for surf in the Paddle Event. L.-R. are Tom Powell, Mike Doyle (who won the event), Mickie Dora, Lucky Cole and Jim Graham.



Above—Marjorie Williamson of the Long Beach Neptunes Women's team checking her underwater gear . . . the Neptunes won the underwater spearfishing division of the Surf Festival.

Left—Kit Clyne of Malibu had a lucky day; she not only won the women's rough water swim . . . but she also is shown returning to the finish line as the winner of the Women's Surf Board Race.

Below—the last event of the day started at 8 p.m. The Ocean Relay . . . Manhattan Beach Life Guard passes a broken board to his team member. High surf aided in breaking the board, this plus being tossed over by the waves as they entered the surf with their Life Boats made a thrilling and spectacular end to a day in the surf.



News Current

NEWS FROM AROUND THE GLOBE
COMPILED AND EDITED IN
SKIN DIVER OFFICES.
Local diving news from readers welcomed.

MIAMI, FLORIDA—Underwater wedding vows were exchanged by **Philip Amero** and **Jane Beeton** 16 feet below the water surface in **Miami's Seaquarium**. The wedding party wore scuba gear and communicated via an underwater telephone system.

ANACAPA ISLAND, CALIFORNIA—Two Venice skin divers, **Ronald Hood** and **Neal Digman**, captured a five foot, 150-lb. sting ray while diving off **Anacapa**, 12 miles west of **Pt. Hueneme**. The ray is believed to be the largest ever taken along the coast.

KITTERY, MAINE—Members of the **Manchester Sea Skates** visiting **Maine** were granted permission to explore the site of the sunken **Conohasset**. The group of divers reported the ship is in an upright position in 40 feet of water and that marine life had just begun on the vessel's chains.

CAYUGA LAKE, NEW YORK—An 18th or early 19th century anchor was recovered from **Cayuga Lake** by divers **Paul Lockwood** and the **Eugene Hills**. The anchor was made to be used with a rope rather than a chain which places its manufacture before 1815, the year anchor chain construction was perfected.

TAMPA, FLORIDA—The 50 ton tugboat "**Capt. Marie**" has been raised from 35 feet of water in the **Seddan Island** channel. **Karl Holder**, owner of the **Suwanee Diving and Salvage Co.**, and skin diver **Everett Hendry** spent several hours fitting cables to the sunken vessel. A giant crane then righted the tug and over a four-hour period raised it to the surface.

VICKSBURG, MISSISSIPPI—Two divers **Jim Hart** and **Ken Parks** recovered two spikes from the historic **U.S.S. Cairo** in the **Yazoo River** before the icy water forced them to the surface. The flagship of a **Yankee** flotilla was discovered about four years before, but no attempts had been made to enter it. The ship is in 30 feet of water covered by shifting river mud and logs.

PLAINFIELD, NEW JERSEY—Organization of a diving unit for the **Elizabeth and Union County Civil Defense** is underway. The water safety program for the new unit will be held in the **Elizabeth YMCA** on the last Saturday evening of each month. Instruction will be by **Joseph Kelly**.

TOPEKA, KANSAS—A roster of **Topeka** skin divers available for public and emergency work has been distributed to public agencies by members of the **Sunflower Aquamen**. Divers' services will be available to public agencies without cost.

SAN FRANCISCO, CALIFORNIA—Retired Navy captain **Albert R. Behnke**, an expert on the effects of deep sea diving and high altitude flying, had the **Navy and Marine Corps** medal pinned to his uniform for saving the life of **James E. French III** by spending 48 hours in a recompression chamber with his patient. **French** was hit with the bends during a deep dive and rushed to a recompression chamber.

RACINE, WISCONSIN—The owner of an 18 foot inboard motorboat which was torn from its moorings and sunk gave the local boy scouts the title if they could salvage it. The scouts succeeded in locating and raising the craft and are spending the winter months rebuilding the boat and preparing it for summer.

MALIBU, CALIFORNIA—**Duffie Fryling** encountered a dozen blue sharks feeding while diving off the **Pacific** coast. He headed for shore some 75 yards away—with two of the sharks between him and shore. He swam toward them and they moved off, but while he bluffed one of them back the other attacked and grabbed the diver by the left arm. **Fryling** reported that he managed to pry the jaw open and got his arm out. He paddled on to shore and was treated at a hospital for teeth cuts from wrist to elbow.

NEW YORK—Latest in the jewelry fashions of this city is the rare black coral being recovered by **Maui Divers**, a corporation formed by three divers in **Hawaii**. The rareness plus the hazards in bringing the coral up from 300 foot depths has made the black coral valuable as jewelry.

PALOS VERDES, CALIFORNIA—**Richard Perez** and **Frank Reno** discovered a human jaw bone while diving near **Marine-land**. The bone, containing five teeth, was discovered just below the surface about 30 feet off shore. They weren't sure what it was until they saw that two of the teeth had fillings. The bone was turned over to sheriff's deputies who forwarded it to homicide investigators.

NIAGARA FALLS, NEW YORK—Twelve high schools in western **New York** received programs last month to develop science projects on their own. The two-part programs began with an explanation of opportunities available to students in research and science and concluded with chalk drawings and films describing underwater research techniques, skin diving and photography. The sessions were directed by the **Buffalo Museum of Science**.

CORYDON, INDIANA—**Edward F. Freiberger** plunged into the frigid waters of an old stone quarry to try out a new diving suit and seconds later surfaced with an arm load of stolen cameras. **Freiberger** returned to the 35 foot deep quarry with a companion, **Henry J. Reynolds**. In two and a half hours they recovered an assortment of merchandise valued at more than \$2000. The divers gave up the search because of cold and inability to see in the murky water. They plan to return for a more thorough search.

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LA JOLLA, CALIFORNIA—Skin divers from Scripps Institution of Oceanography have photographed underwater rivers dotting the ocean floor . . . the only difference is that these underwater rivers are rivers of sand. The geological discovery was made by Dr. Wheeler R. North. Movies of the rivers were highlighted at the 1959 Underwater Film Festival in San Gabriel, Calif.

QUEENSLAND, AUSTRALIA—Russian professor Vladimir Kort, director of the Soviet Institute of Oceanography in Moscow, while visiting in Brisbane said Queensland with its unique Barrier Reef could be a world pioneer in coral research.

GRAND HAVEN, MICHIGAN—State police skin divers failed in a search of the Grand River for a black sample case full of potentially dangerous pills, but plan to try again when the water clears. Two cases were stolen from a pharmaceutical salesman and apparently tossed in the river. One of the cases was recovered. Police said some of the pills could be fatal unless taken according to a physician's directions.

WESTERN TV STAR John Smith of Cimarron City and Laramie is an avid diving fan and reveals he has been skin diving since he was 14.

From the State of Wisconsin Conservation Bulletin—Skin divers, are you looking for sport? Then try this. Many lakes support big crayfish populations. These crayfish are in shallow water at night and deep water during the day. Just go out into the 12-15 foot depths to find them. As you scan the bottom, look for the trails in the mud or watch for them sitting on the bottom. In open water they rear up in threatening posture when you approach. Just grab them and put them in a sack. A good collection of big ones could mean a meal. Broiled crayfish flesh dipped in butter is as good as lobster.

NORFOLK, VIRGINIA—Police officers D. B. Aveyard and D. C. Scott were successful in an attempt to locate a safe that was thrown from a bridge into the depths of Smith Lake. This was the first recovery attempt made by the newly formed Underwater Recovery Unit. While searching for the safe they also discovered an outboard motor that had been stolen in 1957.

GREAT NECK, NEW YORK—Four freezing members of the Golden Sharks diving club exploded the long held belief by Suffolk oldtimers that Lake Ronkonkoma is bottomless. The divers, Sidney Binder, Joe Sere, Bill Klotz and Andy Andrioli, reached bottom 81 feet down. They discovered several springs feeding the lake, but nothing like the legendary underground river.

JUNEAU, ALASKA—The water off Taku Glacier was 30 degrees above zero only half a degree above the lowest recorded ocean temperature. Ten Canadian Navy divers wearing rubber suits and scuba units slid down the anchor cable of the mine sweeper HMCS Fortune. Four minutes later they were on the bottom 175 feet down in what is believed to be a world record mass dive. The dive was made to prove the practicability of wet suits in extreme depths and extreme cold. The Navy said two San Diego scientists dived to 180 feet in wet suits in the Bering Sea, but knew of no mass dive anywhere equalling that of its ten man team.

SACRAMENTO, CALIFORNIA—An early day buckboard was recovered from Donner Lake by divers Norman Hewlett, Mel Pitts, Frank Sheets and Ed Hart. The relic will be on display at Hewlett's home.

NEW YORK—From a New York Post columnist, "seems socialite adventurer John Potter has found off the coast of Spain what seems to have been the payship of the Spanish Armada. Stock to finance the venture is for sale on Wall Street and already the crew is siphoning off several centuries of mud, hoping to find under it the buried ship and \$75,000,000 in gold. Skin diving expert Peter Gimbel is expedition advisor."

TURKEY—Forty-one sunken vessels, some dating from the twelfth century, have been located off Turkey's Aegean Sea shoreline by skin divers working out of Izmir. Large jars, bronze and copper utensils and other artifacts salvaged from these ships are being cleaned preparatory to being exhibited in a special section of the fourteenth century Turkish castle at Bordon.

MIAMI, FLORIDA—Eighty year old Mrs. Jessie Drew-Bear began a career in painting 20 years ago when her daughter gave her paints as a Christmas present. Today she is a well-known artist. The diving angle enters the picture as the spry little woman also likes to skin dive and one of her most beautiful canvases is an underwater study from her diving expeditions.

EAST MILTON, MASSACHUSETTS—Betty Howard, a YMCA swimming teacher, has established a Massachusetts woman's deep diving record. She descended to a depth of 190 feet in Swingles quarry this fall.

LOS ANGELES, CALIFORNIA—The AiResearch Division of the Garrett Corp. has announced it has perfected a moon pack to be worn on the back of a man disembarking from a space ship to the surface of the moon for exploration. The new device is compared to a diver's air tanks and regulator and the principles involved are believed about the same.

BROOKINGS, OREGON—A large rock pinnacle jutting up to within five feet of the surface at low tide will be blasted from the Chetco River by skin divers.

PERTH, AUSTRALIA—A shark's fin tore the rubber suit of spearfisherman Ian Marks. He was rescued by a diving companion after he had refused to abandon his catch and his suit filled with water.

RIDGEFIELD, CONNECTICUT—Skin divers searched for several hours in a fruitless attempt to recover the weapon that killed a grocery chain store manager. The search was made in the Housatonic River.

A survey by the Gilbert Youth Research Co. of 600 teenagers showed that they believe hobbies (among those listed was skin diving) were a cure for juvenile delinquency. Seventy percent of the teenagers interviewed in the cross country survey professed to having one or more hobbies.

LA PAZ, BAJA CALIFORNIA, MEXICO—Californians Mr. and Mrs. Ted Warren arrived in La Paz after a 15-day trip in a four wheel drive pickup. After several days visit in the picturesque village the Warrens plan to ship their pickup to Mazatlan and then drive back to Redondo Beach, Calif.

WINDSOR, ONTARIO, CANADA—Five skin divers have recovered an anchor believed more than a century old from the Amherstburg Channel. Curator of the Hiram Walker Museum believes the anchor is from the schooner A. Bradley which collided with another ship north of Malden in August 1859.

NEW MILFORD, CONNECTICUT—Three diving clubs joined the search for a fisherman believed drowned in Lake Lillinonah. The divers from Danbury Skin Diving Club, Waterbury Y Divers Club and Norwescon Divers located the victim's body in ten feet of water. The recovery was made by Harry Dubay of the Waterbury Y Divers.

NANTY-GLO, PENNSYLVANIA—A skin diver was requested by the city water authority to make an underwater survey of the Williams Run reservoir concrete valve structure. Following the underwater search the diver reported the cracks in the structure were serious.

HERON ISLAND, AUSTRALIA—Deputy Premier Ken Morris was on Heron Island in the Barrier Reef to open the Centenary Underwater Convention. He decided he'd like to stay just a little longer, so composed a telegram to the premier—"have foot caught in giant clam on reef. Cannot get back. Keep sending the money." It was a good idea, but didn't work.

ST. PAUL, MINNESOTA—Scientists at the Science Museum of St. Paul are eyeing local and out of state lakes as sources of new archaeological materials since the finding of one excellent piece of pottery in 40 feet of water in Lake Phalen. The find was made by diver Roger Nellessen. The museum plans extensive diving operations in Lake Phalen and White Bear Lake next summer. Underwater exploration for archaeological artifacts opens new frontiers for scientific exploration.

MIAMI, FLORIDA—Sixty-one-year-old Isabel Schollenberger is an active member of the Miami Morays diving club and joins the group "as often as the weather permits." An avid skin diver for the past three years, she was granted membership in the club with some reservations, but according to club president is accepted as one of the gang, carries her own equipment, and never asks others to wait on her or help with equipment. She thinks more older people should take up skin diving as a hobby saying, "they'll find this a wonderful way to add new incentive to their lives."

AUSTRALIA—The South Australian Underwater Skin Divers' and Fishermen's Association has introduced the Divers Flag. One hundred have been made and are being distributed. The same move is afoot in New Zealand. A pamphlet on the flag, its meaning and usage is being distributed to boat owners.

MONSTER OF TUMACH

By D. G. H. STEVENSON

Kitimat, B. C., Canada



A CROSS the bay from the Kitimat Smelter, lies the old Indian Village of Kitimat. The Indians there have a culture rich in ancient lore and legend. Even to this day these legends are taken very seriously and it is not considered wise by the Indians to either scoff at them or interfere with them in any way.

As we were fully aware of their views in such matters, Carl and I were very surprised when we were approached by one of their councilors and asked if we would be interested in investigating one of their legends.

It seems that years ago a sea monster dwelt about twenty-five miles down the channel near a point named by the Indians Tumach. This monster dwelt in an underwater cave and was said to resemble a gigantic rat.

Whenever unwary canoes passed too close to this point the monster would overturn the canoe and devour the occupants. This went on for many years until one man braver than all the rest fought it and is believed to have killed it. The strange part is that nobody has ever seen this cave or anything to give foundation to this story. Needless to say Carl and I were keen to locate such a cave if it existed.

We obtained supplies for a weekend and got our diving gear together. The Indian councilor supplied his fishing boat and we were off.

When we were within a few hundred yards of Tumach point we cruised slowly back and forth over the area but even though the tide was low no cave was visible. We then donned our gear and went under. The cliffs were very steep here and the water deep. There was however a narrow shelf about fifty feet down the cliff and running for quite some distance. We decided to search the cliff face from the surface to this bench for a couple of hundred yards on either side of the point.

As we reached a spot almost on the point and about thirty feet down we saw a very dark area under an overhang. We were using underwater lights so we switched them on for a closer look. It was a cave. The opening was about three feet by five feet and heavily covered by marine growth. Numerous small trepangs were on the rocks outside. When we entered the cave it was found to open up to about ten by fifteen feet in size. It was absolutely devoid of all life vegetable or otherwise except for one small marine plant in the center of the floor. This floor was of clean white gravel in contrast to the dark rocks of the outside.

(Continued on Page 89)

"aqua-lung"

1960



u.s. divers co.

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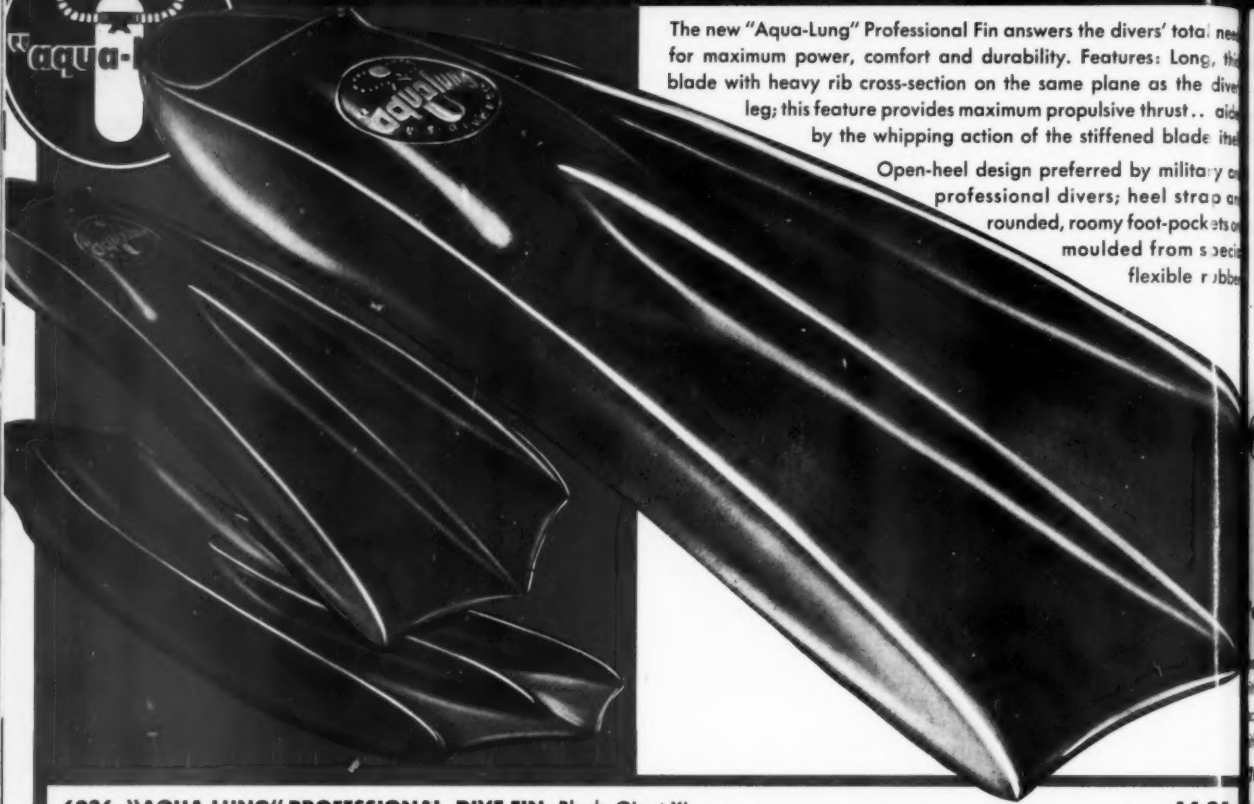
1960



"aqua-lung-professional" foot fins

The new "Aqua-Lung" Professional Fin answers the divers' total need for maximum power, comfort and durability. Features: Long, thin blade with heavy rib cross-section on the same plane as the diver's leg; this feature provides maximum propulsive thrust... aided by the whipping action of the stiffened blade itself.

Open-heel design preferred by military and professional divers; heel strap and rounded, roomy foot-pockets are moulded from specially selected flexible rubber.



6036 "AQUA-LUNG" PROFESSIONAL DIVE FIN, Black, Giant XL	14.95
6035 "AQUA-LUNG" PROFESSIONAL DIVE FIN, Black, Giant L	13.95
6034 "AQUA-LUNG" PROFESSIONAL DIVE FIN, Black, Giant ML	12.95
6033 "AQUA-LUNG" PROFESSIONAL DIVE FIN, Black, Giant M	11.95

"aqua-lung-professional" dive mask



A revolutionary concept in underwater vision... a Dive Mask with U-shaped "wrap-around" tempered glass lens which provides completely unobstructed vision! The Mask skirt made of highest quality rubber, with finely bevelled edge for perfect seal, with or without Exposure Hood, provides a slanted lens for unobstructed view without neck strain during ascent. The chrome-plated, aluminum frame provides strength with lightness. The lower skirt, with built-in "Equi-Pressure" feature, permits pinching the nostrils when blowing to equalize the ears.

5034

"AQUA-LUNG" PROFESSIONAL DIVE MASK, Black . . . 9.95

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2210

underwater telephone



"Aqua-Vox" underwater telephone

The "Aqua-Vox" is a telephone system designed to transmit the voice with good acoustic properties, from the operator above the water surface to two divers under water. Divers may talk to the operator or to each other.

100 "AQUA-VOX" 250.00

The operator's equipment consists of the packaged telephone containing master controls, electronic circuit, and long-life, easily replaceable batteries. From the bottom of this case run three extremely lightweight cables, one to the operator and two to the divers. The cable is impervious to water, extra-flexible, and non-kinking. For the operator's head-set, the receiver is entirely contained in molded plastic, positioned on the head with a comfortable stainless steel band to which is attached the stainless steel rod support for the microphone, which is adjustable to suit each operator.

Each diver is equipped with a lightweight, adjustable head-band, which contains the receiver, microphone, and connection for the cable. Each telephone package includes 300 ft. of cable for each diver.

The entire unit is constructed so that it may be operated satisfactorily in salt water. All electrical connections are "potted" for maximum security; receivers and microphones are encased in molded plastic cases. The operator's telephone case is molded plastic, with all components completely sealed from salt atmosphere and moisture. The case is lightweight and supported on the operator by means of a neck-strap made of polyvinyl.

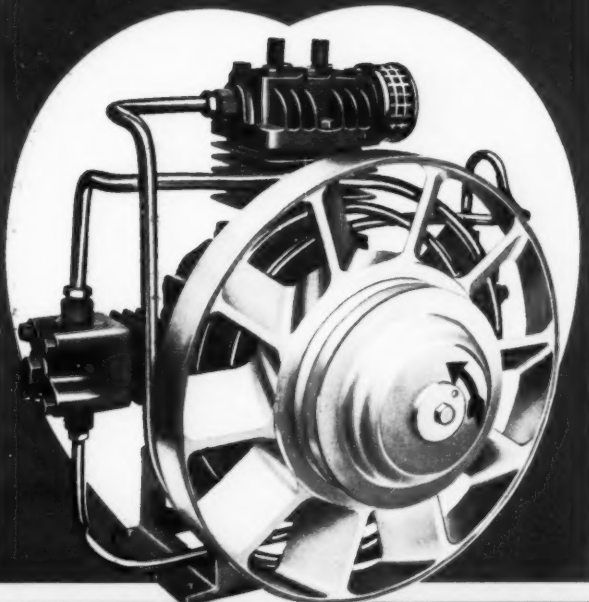
"cyclone" compressor

The heart of our new "CYCLONE" Compressor. Designed specifically to requirements of the "Dive Shop," this new work-horse delivers $3\frac{1}{2}$ times the air volume of our highly successful Alize.

Power is furnished by a 3 horsepower three phase electric motor @ 220 and 440 Volts, with a full load rating of 17 amps. Drive is by a double "V" belt.

The complete assembly (not shown) is ruggedly mounted on a shock proof platform.

2210 "CYCLONE" COMPRESSOR . . . 995.00





1960

**SINGLE TANK BLOCKS
EQUIPPED WITH**

"bac-pac"

PAT. PEND.

and

"tri-o-seal"

**STANDARD EQUIPMENT
NO EXTRA CHARGE**

The "Bac-Pac" engineered in our factory with simple, functional design for maximum comfort. The Harness positions the Regulator correctly between the diver's shoulder blades. The "Aqua-Lung" fits snugly without need for chest strap; the design prevents the tank from rolling on the back.

- "AQUA-LUNG" EASILY MOUNTED ON DIVER'S BACK. QUICKLY RELEASED WHEN DESIRED.
- PAC FRAME OF BLACK CYCOLAC. A VERY STRONG AND SHOCK RESISTANT PLASTIC USED FOR FOOTBALL HELMETS, TELEPHONES, ETC.
- PAC MOUNTED ON TANK WITH SINGLE WING BOLT WITH BRASS INSERT.
- WIDE, COMFORTABLE SHOULDER STRAPS OF RESILIENT, DURABLE PVC PLASTIC.
- HARNESS STRAPS OF STRONG, QUICK DRYING WEB NYLON.
- DELUXE HARDWARE OF HEAVY CHROME PLATED BRASS THROUGHOUT.

"tri-o-seal"

PATENTED

- $\frac{3}{4}$ " STRAIGHT THREAD ON TANK VALVE FACILITATES INSPECTION OF INSIDE OF TANK.
- "O" RING REPLACES OUTDATED LITHARGE SEAL; ANY TYPE OF LEAKAGE IS PREVENTED.
- WHEN TANK IS EMPTY, THE VALVE CAN BE REMOVED EASILY WITHOUT SPECIAL TOOLING.
- VALVE CANNOT BE REMOVED ACCIDENTALLY.

SEE PAGE 7 FOR PRICE BREAKDOWN

u.s. divers co.

3323 WEST DELHI ROAD • SANTA ANA, CALIFORNIA
1916 WEST COLUMBIA AVENUE • CHICAGO 26, ILLINOIS
MANHATTAN-PACIFIC BLDG., 114 MANHATTAN ST. • STAMFORD, CONNECTICUT

MYSTERY OF THE

AVE DEL MAR

By OWEN LEE

I WAS SWIMMING out in a circle at the end of the search line when suddenly a powerful surge of water catapulted me with crushing force towards the jagged rocks. The search line sprang taut and then snapped under the sudden strain. The water churned a milky white, and I could hear the brutal roar as it crashed off the rocks and geysered forty feet into the air above me. I grabbed hold of an algae and somehow managed to hang on until I felt the backwash which came so powerfully that it threatened to tear the air hose from my mouth.

When the water cleared, I saw three porcelain-white bodies washing over the bottom, but I let them go and looked for my safety man. He was nowhere in sight. I wondered if that last wave might have smashed him against the submarine wall of stone. Then I thought again how stupid it was to be risking our lives to save a few dead men.

It had begun about a week before on a cool Friday in November when twenty-five men climbed aboard a boat called the Ave del Mar and headed out to sea for a routine night of sardine fishing. Behind them, Moaña, their tiny village on Spain's Galician coast, glittered under festive strings of colored lights. A band played *pasa doubles* in the cobblestoned plaza where itinerant wine merchants and venders had set up their stalls. It was the eve of Saint Martin's Day, a day in honor of the patron saint of the village and the beginning of a three-day fiesta. Legend had it that Saint Martin's pleasure or displeasure with the Moaña villagers would be manifest before the night was through. But the fiesta could not begin in earnest until the Ave del Mar had returned to port, for her crew consisted of almost half of the village's adult male population.

The Ave del Mar arrived at the fishing grounds together with three other boats from neighboring villages and, if the catches of the other boats were any measure, the crew made a good haul. About three o'clock in the morning the wind shifted and a strong sou'wester pushed in high bottom swells from mid-Atlantic. The old hands aboard the Ave del Mar had weathered many worse storms, however, and their early departure from the fishing grounds was credited to the inviting presence of a fiesta in their village rather than to the bad weather. About five o'clock, a lighthouse keeper heard the motor of a boat approaching a narrow passage between the outlying islands. If the motor were that of the Ave del Mar, it was the last anyone was ever to hear it.

It was the custom of the women of Moaña to meet their husbands and sons at the dock when they returned from a night's fishing. As the gray dawn of Saint Martin's Day appeared, they were waiting there, as usual. They chatted and made plans for the coming fiesta to pass the time. When the Ave del Mar failed to show up by eight o'clock, however, they became restless. They telephoned the big fish markets in nearby Vigo, where unusually large catches were taken before a boat returned to home port. No one had seen the Ave del Mar. It was the same story at the fish markets in Bayona across the bay and the one in Congas to the north. They questioned the crews of other boats which by now had returned to the neighboring villages, but still no one had seen the Ave del Mar.

A rumor went about that the boat had engine trouble, so the women waited patiently, expecting to see the boat come in under tow.

When it failed to appear by noon, the swollen crowd on the quay became anxious. Don Eduardo Calvar, owner of the Ave and father of the boat's captain, scurried from family to family assuring them that the boat would soon show up, but the nervous way he paced the docks revealed his desperation.

At last, a motor launch manned by the brothers and sons of the Ave's crew put out to sea to search the course to the "Ave's" fishing grounds. They bounded through the chag-

(Continued Next Page)

ing waters of the narrow passage, but found the sea barren of any life. They checked the protected coves and inlets of the islands where the Ave del Mar might have sought shelter. They found only a few scallop fishermen who were waiting out the tide. Then dusk was upon them and they decided to return after just one last look at the open sea.

As they ploughed through the narrow passage once more, the crew noticed hundreds of dead sardines floating on the surface. Then one sailor spied a small water barrel bouncing off the steep rocky shore where it had just been pitched by a leaping wave. A dinghy set out to retrieve it. While the launch waited, other crewmen found several pieces of freshly splintered wood and a suit of foul weather gear bobbing on the surface.

It was a strange sense of success the crew felt. These three pieces of corroborative evidence gave awful validity to the purpose of the mission.

The launch searched the area as thoroughly as the pounding surf would permit. Before long they had added more evidence that sustained their dreadful fears. Several square yards of decking were discovered washing against the jagged rocks. When the dinghy went to retrieve it, one sailor gave a sharp, almost painful cry. Nearby, two bodies, floating face down, surged gruesomely in the swells as they broke on the rocks. They were the engineer and a sailor from the Ave del Mar.

The launch rushed its cargo to nearby Vigo to report to the commandant of the Navy. Then they returned to Moana.

The entire village was waiting, hoping against hope for news that their loved ones were still alive. Reluctantly the crew told their story. When the truth became so clear, the mothers and wives broke into hysterical tears. Many even fainted.

Don Eduardo, the owner of the boat, elbowed his way through the chaotic crowd. "But what happened to the other bodies?" he demanded. "Where is the wreck of the boat?"

"They must have all gone down together. We checked both islands and as far as we know, no one made it ashore."

For the widows and mothers who had waited vainly on the docks, the circumstances added heavily to their tragic losses. Unless sacramental burials were properly ministered, their deceased were doomed to extra days in purgatory. Don Eduardo himself had to hold himself responsible for the fate of his own son and nephew in the hereafter. From that moment on, it became his uncompromising obsession to find the bodies of the Ave's crew and provide them with sacramental rites. But where were the bodies to be found? Nobody really knew.

A helmet diver was called out to search the bottom. Families of the crewmen, all clad in mourning clothes, rowed the fifteen miles out to sea in order to receive their dead from him. In the meantime the storm had continued and even grew worse. When the diver saw where he was to dive, he shook his head and hove to in the lee of an island.

"What's the matter?" Don Eduardo demanded.

The diver shook his head again. "I can't go down in that kind of water," he said.

"You've got to," Don Eduardo insisted. He pointed out to the thirty-odd boatloads of families who waited hopefully for the deliverance of their dead.

The diver threw up his hands in despair. "What can I do?" he cried. "Nobody even knows where the boat went down. I would have to search the whole area and that would take months. This bottom is made up of huge boulders, which I would have to climb over. The boat would have to follow me and in this rough water I am lucky if I can get down at all."

Don Eduardo would not take no for an answer. "I'll give you anything you ask for," he pleaded. "Anything, plus fifty per cent of anything of value you can salvage."



Women and children, families of Ave's crew, waited at the dockside in anguish for the bodies of their loved ones to be returned to earth.



Sea-thrashed point of St. Martin's Island, 10 miles off shore, whose patron saint was being feted by the villagers of Moana.



Vigo diver ties line around body of stricken crewman of the village fishing boat.

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The diver considered. It was a good deal. He could name his own price and if nothing were left of the boat but the motor, that alone would be worth a couple of hundred thousand pesetas. Then he looked at the boiling waters again. Some of the waves were leaping forty or fifty feet into the air as they crashed off the tooth-like walls of the islands. Again he shook his head.

"Not in this water," he said. "I'll have to wait for calmer weather."

Don Eduardo conceded reluctantly. In the meantime, he set several crews to dragging the bottom with grapples. This produced nothing but about sixty yards of fishing nets. Nevertheless, it gave additional evidence that the Ave was somewhere in the area and made Don Eduardo even more impatient. Then someone told him there were *hombres ranas* (frogmen) working nearby. It was true. For months we had been exploring the bottom in the lee of the islands in search of a ship which had sunk there 250 years ago.

He came to see us and explained his problem.

From his description of the task, it was right down our alley. A systematic underwater search of the entire passage might be required. As professional frogmen we had mobility that a scavenger diver could never hope for. As specialists in underwater exploration we had already made over 3,000 visual search dives and covered an average of 400 square meters of ocean bottom per day. However, we were foreign divers working for a foreign company. As such, we were prohibited by the Spanish government to engage in any outside commercial salvage work which would compete with Spanish divers. Besides, none of us relished the idea of wrestling underwater with twenty-three dead men.

We had to decline. Don Eduardo left and we returned to our work. Nevertheless, his visit served the purpose of inspiring a more active interest on the part of the helmet diver.

The low tide offered up a calmer surface. The diver got into his suit and went down to start his search. When he came up, he was more discouraging than ever. He was able to cover only a tiny area and he had found nothing. But the worst part was that the treacherous underwater currents constantly threatened him and the huge craggy boulders and algae forests made any movement extremely difficult and hazardous. Nevertheless, Don Eduardo and the various families insisted that he continue.

The next day when calmer weather had set in, the diver stayed down a good time—still without results. That was the last they were ever to see of him. On the third day, the salvage boat came out and said that the diver was sick in bed.

A couple of days later, the local daily printed the news that the diver had died of chronic bends.

His death did not lessen the Moanans' obsession to retrieve the bodies in the slightest. Don Eduardo approached two other scavenger divers and both of them refused to have anything to do with the Ave del Mar, claiming that the project had been jinxed by the first diver's death.

At last his boat pulled next to ours. Right behind it came a dozen other boats bearing the families of the Ave's crew. They all crowded aboard our boat.

Don Eduardo pleaded with us to take on the job, and we reminded him of the conditions set forth in our government concession.

Then two widows dressed black with black scarves tied around their grieving heads put us to shame.

"We are not rich people," they explained in strained and feeble voices, "but we have managed to save some money over the years and we will give you anything if you will only help us find our husbands."

We four divers went into a huddle. The only way we could do it would be as a service and not accept any money for it. We figured, at most it would take us three days to



Vigo divers emerge from the calm sea after first finding the wreckage.

find the boat. In addition, it would provide an opportunity to return in part some of the many favors the Spanish had done for us. We ordered our boat crew to weigh anchor and head for the passage.

On the way we checked with Don Eduardo on the force of the sea and wind on the night of the catastrophe.

When we arrived, we appreciated how the helmet diver must have felt. The wind was still blowing hard from the same direction. The mouth of the passage was all white water. Huge breakers spewed towering gushers into the air as they crashed onto the rocky shore. The boats pitched violently in the powerful, rolling swells.

The area which looked the most promising was the worst of the lot. It was a rocky cove which was open to the full force of the open sea. The shallower water made matters even more difficult. Every new swell sent a brutal surge of water crashing against the rocks. Then as a trough passed the surge of water would suddenly reverse itself and the shallows would drain, carrying everything movable with it.

Too many things could go wrong. If we got too close to the shore, a breaker could pick us up and crush us against the rocks. The dinghy which usually followed our bubbles would be practically useless in the surf and might meet destruction. Unable to maintain orientation in the surging water, we might get lost and come up in the middle of nowhere without enough air to swim to the boats. A sudden rush of water could rip our breathing tubes out of our mouths.

We decided to start in the deeper, calmer waters and work our way in. It was about a hundred yards across the mouth of the cove. We anchored our boat at one end. John Nathan and Robert Stenuit got dressed in their rubber suits and tied themselves together with ten yards of their search line. Robert took a thin steel cable from the dinghy and ducked under the water. John followed.

The dinghy guided them in a straight line across the mouth of the cove. At the end of the run, the sailor signalled with a tug on the cable, moved twenty yards closer to the shore and started back. Already, they were dangerously close to the breakers. It was impossible to follow the bubbles as they leaped onto the boiling surface. The sailor was having a hard time controlling the dinghy in the heavy swells. He had to let out a lot of slack on the cable so as not to jerk the divers around.

It was only about thirty feet deep and the surging of the swells shot the divers back and forth with dizzying speed. Finally they would swim when the surge carried them forward and then hang onto a rock when it threatened to take them backwards.

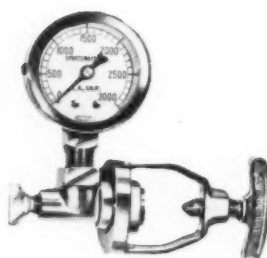
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New Aquatic Equipment for

1960



NEW GIANT SIZE VOIT VIKING SWIM FINS—Voit has added an extra large size in its popular two-tone blue, curved, floating Viking Fins, for strong swimmers who can handle greatest possible thrust. The full footpocket is designed so it can easily be converted to a heel-strap model if desired. The footpocket is soft dark blue rubber for comfort, and the curved propelling area is stiff light blue rubber for greatest thrust. The propelling blade is the largest on the market— $22\frac{1}{2} \times 9$ ". The new giant fins fit shoe sizes 13 and up. Price \$14.95.



SPORTSWAYS NEW TANK PRESSURE GAUGE AND YOKE WITH BLEEDER VALVE—Brass Case all chrome plated. This new design is part of SPORTSWAYS entirely new line of basic underwater equipment hardware, including Valves and Gauges. This compact design makes the Pressure Gauge easy to use. The Yoke revolves for easy setting and the new Bleeder Valve Thumb Screw replaces the old, difficult-to-turn, knurled screw. Assembled, inspected and checked in Sportsways own plant and laboratory. Price \$12.50.



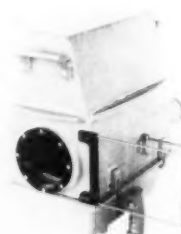
NEW "QUICK RELEASE" WEIGHT BELT PROVIDES ADDED SAFETY—Swimaster's new "Quick Release" weight belt offers divers an attractive, large, stainless steel buckle that is safer because it responds faster to the flick of a finger, while it completely avoids accidental opening. Its heavy, 2" jet black cotton webbing resists salt water, sun and fungus. The new webbing backguard protects against snagging and tearing and the one piece adjusting buckle eliminates slipping. Sewn with double reinforced nylon, the "Quick Release" Belt is virtually indestructible.



JERRY GREENBERG is shown holding the new Seahawk Mark IV for Heiland Strobonar 64. The Seahawk Mark IV underwater housing is for the Heiland Futuramic Strobonar 64 series of electronic flash unit. The Mark IV housing is precision-machined from cast aluminum and anodized to resist salt water corrosion. Finished in blue hammertone. Housing includes flash tripping device, flash mounting bracket, flash arm, plus necessary wiring and fittings. Plugs into any Seahawk housing which has a Power Pak as well as any Rolleimarin with proper adapter. The Futuramic Strobonar 64 electronic flash which the Mark IV houses can deliver over 200 flashes per set of 3 flashlight batteries. Has repeating light source capable of lighting thousands of pictures. Seahawk Mark IV complete (but without Futuramic Strobonar). Price \$299.95.



AUTOMATIC SHIFT BRINGS MODERN DRIVING EASE TO OUTBOARD BOATING—With the Unitrol, one hand does it all; with an easy, natural motion, the lever is pushed forward to move the boat forward with increasing speed—then pulled back to reverse. An exclusive positive neutral safety zone between the forward and reverse prevents an unintentional "panic plunge." Unitrol is equipped with a "warm-up" key-bar used in starting; movement of the control lever either forward or reverse automatically returns the key-bar to the normal idle. For complete details on the new "automatic shift" Unitrol outboard motor control system see your marine dealer, or write direct for a descriptive folder to Mark Marino, Fox River Manufacturing Co., 422 Marion Road, Oshkosh, Wisconsin.



UNDERWATER BLIMP—The new underwater Blimp manufactured by Birns & Sawyer Cine Equipment Co., of Hollywood, California. It is designed of welded marine aluminum girder plate, stainless steel fittings, and "O" ring sealers. The base is standard, with interchangeable tops, which will accept either 16mm or 35mm Arriflex camera. Loading capacity, 400 feet. The 16mm Arri housing has separate nose cones for the wider 5.7mm lens, and accepts either 9mm Kinetar or 10mm Schneider lens. The 35mm housing sportsfinder will extend for 18mm lens use. Price: \$2495.00. For additional information, write or phone: Birns & Sawyer Cine Equipment Co., 6424 Santa Monica Blvd., Hollywood 38, California. Telephone HOLLYWOOD 4-5166.

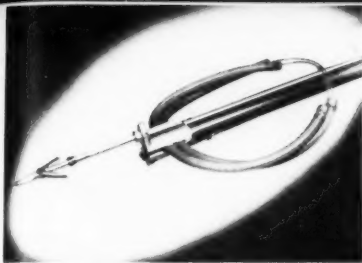
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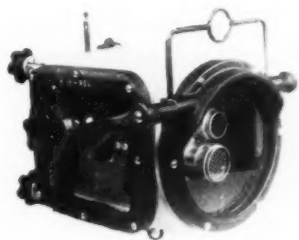
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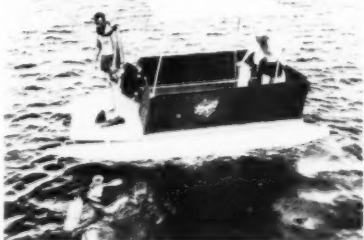
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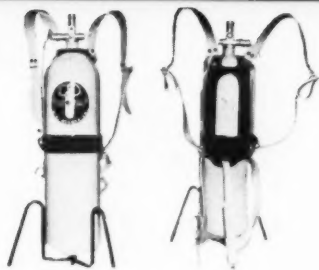
THE POWER MUZZLE—A replacement muzzle for all standard Arbalet type spear guns, designed to give the competition minded diver a variable power spear gun for all types of underwater game. Inexpensive replacement slings is a big feature for the serious diver. Complete Muzzle with two slings, introductory price . . . \$7.95 from **UNDERWATER SPECIALTIES CO.** P.O. Box 13411, Tampa, Fla.



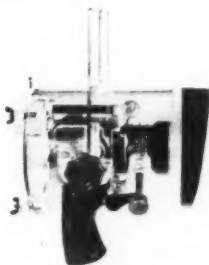
"MAR-VEL" MOTION PICTURE HOUSING—For underwater use is a strong, good looking, cast aluminum housing that fits most 50 ft. reel cameras either 8MM or 16MM. Designed for depths to 100 ft. and with its easy handling, it can be a prized possession in recording wonderful experiences. Produced by **MAR-VEL PRODUCTS CO.**, Box 84, Camden 1, N. J. at \$119.50 Retail.



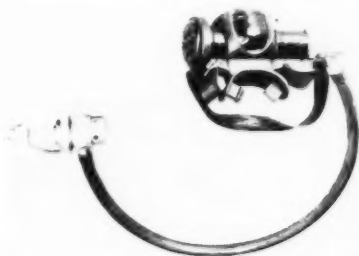
KAYOT—The family playground afloat, manufactured by the Kaye Yacht Pontoon Boat Company of Mankato, Minnesota. With fun space for 12 to 18 people on its spacious deck area, Kayot has all the attractive aspects of a backyard patio on pontoons. It's a complete family playground afloat. You can swim, dive, picnic—even barbecue while cruising. Kayot is so stable you can install such optional equipment as springboards, diving trampolines, and boarding ladders as they are ideal for use on its large diving platform area. The Kayot is available from only franchise dealers. Call, write or wire the Kaye Yacht Pontoon Boat Company, Mankato, SD, Minnesota, for the name of your local dealer.



"AQUA-LUNG BAC-PAC"—The revolutionary new "Aqua-Lung Bac-Pac" will be standard equipment on all U. S. Divers 1960 single tank blocks. Made of black cyclac, a very strong, tough plastic, impervious to salt water, sun and chemicals. The Pac is easily mounted on the tank with a single wing-bolt and as easily removed. The wide comfortable shoulder straps are of a resilient, durable plastic; harness straps are strong, quick drying web nylon. All hardware is heavy chrome-plated brass. See your local dealer or write U. S. Divers Company, 11201 W. Pico Blvd., Los Angeles 64, California, for further information.



SUPER-WIDE HASSLEBLAD IN A DIVE-RITE CASE—All custom housings are light, compact and functional with (4) convenient controls for film wind, shutter release, f-stop and focus, plus features such as: sport finder to match your lens, pistol grip handles, your light meter installed and flash jacks for still cameras. One price for practically any camera—\$150. Also housings for light meters, geiger counters, tape recorders, etc. Write for quotations to: Dive-Rite custom cases by Mart Toggweiler, Box 3445, Long Beach, California.



NEW SINGLE HOSE REGULATOR—The Nemrod "Snark II" by Seamless Rubber Company, New Haven, Conn. has many new features which include: safety escape valve, rotating mouthpiece, all stainless steel and resistant materials in this fine regulator. Price, \$32.50, at dealers everywhere.



SKIN DIVERS' FALCON RADIO-PHONE—A 2-way radio communications system tunes 22 channels in the new 27 mc citizens band at a reasonable price. An ideal small compact "slim line" permits use vertically or horizontally. Communicate from boat to shore or home to tell the wife you are going to take just one more dive and to keep the skillet hot. Can be carried anywhere. No FCC examination necessary. For illustrated brochure and additional information write or call: A. W. Brothers, 16113 So. Harris, Compton, Calif., Telephone NE 6-7046.



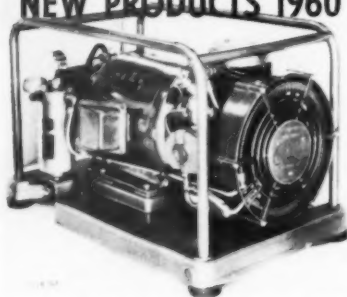
CENTRAL SKIN DIVERS, 160-09 Jamaica Ave., Jamaica, N.Y., offers a new 1960 custom fitted Neoprene Suit, 3/16 skin two sides completely redesigned along the lines of their fabulous custom kit. This suit offers a zipper front with pants, hood, boots and gloves. All seams carefully taped. Many new innovations including double knees and double elbows. Each suit is individually made from your dimensions. You give Central all your measurements and they make a custom suit for you. Price \$45 delivered.



THE "MAR-VEL PAK"—Is a new Scuba Set carrier that includes the diver's weight set as an integral part of the lung unit. Only a belt strap is used as the form fitting, swiveling, shoulder loops hold the set on firmly. Knife, depth gauge and float can be attached directly to the Pak to give the diver a claimed **TEN SECOND** "water ready" time. Produced by **MAR-VEL PRODUCTS CO.**, Box 84, Camden 1, N.J.

MORE NEW PRODUCTS FOLLOWING PAGES ➤

NEW PRODUCTS 1960



NEW CORNELIUS AIR COMPRESSOR—Model 3800105 features a 3 H.P., single-phase electric motor to be used with commonly available 220-volt, 60-cycle current. This large capacity compressor will fill a 70 cu. ft. air tank with pure, breathing quality air in less than 18 minutes. Adjustable pressure switch and motor starter included. Capacity is 4 CFM with pressures up to 3000 PSI. The Cornelius Company, 550—39th Ave. N.E., Minneapolis 21, Minn.



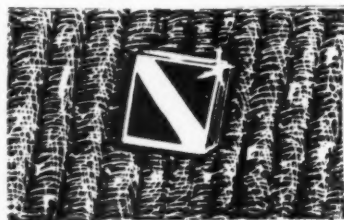
"AQUA-LUNG" PROFESSIONAL DIVE MASK—A newly designed dive mask with U-shaped "wrap-around" lens which provides complete unobstructed vision. The mask skirt, made of the finest quality rubber with finely bevelled edge for perfect seal, provides a slanted lens for best possible viewing without neck strain during ascent. The chrome-plated, die-cast aluminum frame provides strength with lightness. The "Aqua-Lung" professional dive mask also incorporates the built-in Equi-Pressure feature, permitting pinching the nostrils when blowing to equalize ear pressure. Available at your local dealer now at only \$9.95. Ask for your 1960 U. S. DIVERS catalog featuring a complete line of diving gear.



SWIMASTER ADDS GIANT MODEL FULL FOOT—"Extra Large" and "Super Extra Large" Full Foot Duck Feet will soon be available to skin divers who wear up to 14 shoe size. Full Foot Duck Feet, introduced by Swimaster just last year, has already taken its place as one of the most wanted fins among experienced divers. This new fin model will provide cushion-soft foot comfort and protection in addition to all the power, quality and thrust for which Duck Feet are so famous.



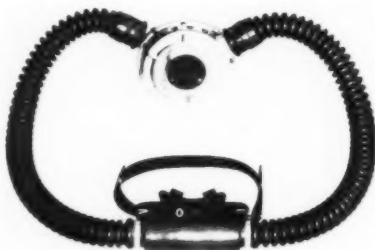
NEW KNIFE—Offered by Dacor Corporation has a heavy duty stainless steel blade with serrated top edge for sawing. It has a finger grip cork handle. The heavy plastic sheath is made to resist all elements. Retail price, \$4.95.



WEAR THE DIVERS FLAG—Lapel Pin of sterling silver with vitreous enamel flag. Many other items include Necktie Tac, Necktie Chain, Cuff Links, Zippo Lighter and Identification Bracelet. Also a complete line of women's jewelry. Price of Lapel Pin, \$1.95 from Sauacuse Aqua Kings, P.O. Box 1041, Sauacuse, N. Y.



THE NEW LINE OF DACOR FINS—is a full foot type in three sizes: Small, Medium, and Large, and are available in black or yellow. Extreme comfort is provided and the fins are rated high in performance tests. The highest quality rubber is used. Priced at \$9.95, \$10.95, \$11.95.



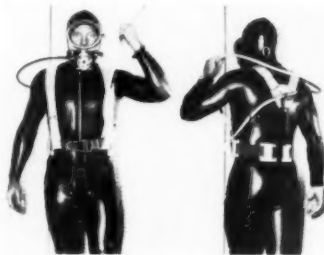
NEMROD SNARK III REGULATOR—Seamless Rubber Company has introduced the first three stage regulator. The two-hose unit features: double-safety diaphragm, hoses reinforced at stress points, non-return valves plus longer air levers for sensitive breathing. Price, \$59.95. Produced by The Seamless Rubber Company, New Haven 3, Conn.



AQUAVISION—Is now being made for the new style masks, and is made of DU-PLEX safety glass for all masks that use round or oval face plates. This was announced by Dr. Fred Kornbacher, inventor and developer of AquaVision. AquaVision is a custom-made, prescription-ground face plate. Each AquaVision is made to the individual eye prescriptions of the diver, incorporating nearsighted, farsighted and astigmatic corrections. Inserts inside the mask are eliminated, as the eye corrections are made in the face plate itself. AquaVision, 4514—8th Ave., N. E., Seattle 5, Wash.



TWO NEW SPEARHEADS INTRODUCED BY SWIMASTER—"The Twin-Spinner" is a stainless steel spearhead with a special revolving double-barb that spins with the fish and holds against any action. Spearhead fish can't tear through or spin off the shaft. The "Retractable Slip-Tip" features an all new reversible slip-tip detachable head that can be retracted through speared fish simply and quickly. The very fine stainless steel penetrating head can be reversed into the carrier after penetration and easily retrieved. The "Single Barb" is Swimaster's Conventional stainless steel spearhead, long acclaimed by divers for its penetrating effectiveness.



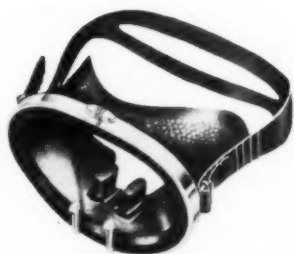
SPORTSWAYS HOOKAH HARNESS—With the tremendous increase in the use of "Hookah" equipment presenting a challenge, Sportsways has developed a professional design "Hookah" Harness and Back-plate, which together with the Second Stage of the WATERLUNG Regulator, has received an overwhelming response from users of "Hookah" equipment. The design of the harness permits attaching all straps to the weight belt. The design of the back-plate incorporates a one-way safety check valve and connections for the "Hookah" hose, which makes easy handling of the hose length for the diver. Price \$59.95.

SKIN DIVER—February 1960



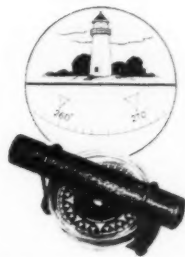
"AQUA-LUNG" PROFESSIONAL FIN

The outstanding features of this new fin are a long, thick blade with heavy rib cross-section on the same plan as the diver's leg, to give maximum propulsive thrust, and open heel design preferred by military and professional divers. The heel strap and rounded, roomy foot pocket are moulded from special black flexible rubber for maximum comfort with or without boots. Available now at your local dealer from \$11.95. Ask for your new 1960 catalog at your dealer or write U. S. Divers Company, 11201 W. Pico Blvd., Los Angeles 64, California.



NEW VOIT 50 FATHOM DIVING MASK

Voit has employed a practical new idea for equalizing pressure on the ears and sinuses common in deep skin diving and lung diving. An exclusive lever on the outside front of the new mask squeezes the nose inside to relieve pressure. The lung mouth-piece can't get in the way, and the levers can be easily worked when diving with gloves. The mask features a wide, panoramic view tempered safety lens, comfortable neoprene split straps and deluxe stainless steel fittings. Price \$6.95.



GOSHEN, N. J.—A new hand-sized, precision instrument that brings skin divers back to any favorite underwater haunt is being marketed by Tel-A-Comp, Inc., here. Called the Tel-A-Comp, it combines a fixed-lens telescope and a jewel-pivoted compass that fixes the position of the surfaced diver the minute he sights a pair of landmarks. The manufacturer asserts that to return to the same spot, the diver picks up one reading on one of the landmarks and follows it, or runs this leg out, until he picks up the other reading. When the two readings are the same as before, he is in exactly the same position as before. Price \$29.75.



THE DREAMER CUSTOM COACH, which mounts on any pickup truck, will now take to the water as well. The manufacturer announces that a pontoon float is now available as an accessory for the coach. The new Dreamer Float, plus a Dreamer Coach and an outboard motor, form a complete houseboat for lake or river. The float is decked and painted, and comes complete with steering, adjustable motor mount and trailer.

Further details may be obtained from the Coons Custom Coach Mfg. Co., 405 Commercial St., Oswego, Kansas, phone 51.



SEASCOPE BOAT MIRROR—Keyed to accident-prevention in inboard and outboard motor as well as sail boating, the sleek, functional 7½" wide x 3½" high mirror is nonbreakable, being made of highly polished brass, triple-chrome plated to provide an easily maintained, gleaming reflective surface that won't tarnish.

Further corrosion-proofing against salt or water spray is triple-chrome plating of the mirror's copper nickel diecast arm and base. Attractively packaged for gift-giving, the Supersite "Seascope" #550 boat mirror is list priced at \$6.95.



PRELUDE TO TAKING UW PICTURES—Amateur photographers can now learn how to take better pictures quickly and easily by means of the Brooks Audio Photo Courses. This dramatic new concept in home study courses features personalized instruction on long-playing vinyl records and magnetic tapes, supplemented by visual aids. The easy-to-learn teaching method was developed by the Brooks Institute of Photography, Santa Barbara, Calif., world-famous school of professional photography. Courses in color photography and motion pictures are being offered on both records and tapes.



TOTEM BOAT—A revolutionary new type of Car-Top Boat, the Totem, is one of the most popular innovations in boat design ever offered to the public—it is foldable. Off-the-shore skin divers will be particularly interested in the Totem foldable Boat as a new and practical solution to their storage and "get-to-the-water" problem. For additional information and illustrated brochure write: A. Maraviglia, (SD) Totem foldable Boats, Inc., 235 15th Street, San Francisco 3, California.



SPORTSWAYS "VISTA-VUE" MASK

is the result of many years of experience in mask design and offers many refinements. The Sportsways Research and Development Team has achieved a precision feather edge for maximum comfort, fit and utility. In the "VISTA-VUE" Mask the eyes are closer to the lens than has ever before been achieved in any mask, giving the diver the maximum panoramic view. Sportsways has engineered a completely new stainless steel "Pressure-Lock" Mask Band...eliminates protruding screws, nuts, etc. Available in Sportsways new International Orange or French Blue retailing at \$4.95, also available in Black Neoprene retailing at \$5.50.



SWIMMING AID—Latest equipment for swimmers and skin divers is web-fingered Swimitts from the Pioneer Rubber Company. Designed for added pleasure, speed and buoyancy. What's more, dexterity is not impaired. Lightweight and flexible, Swimitts allow complete freedom of finger and hand movements, even to pick up and hold slippery objects. Available in junior and senior sizes, suggested retail prices are \$1.29 (junior small), \$1.50 (junior medium and large) and \$2.00 (senior small, medium and large).

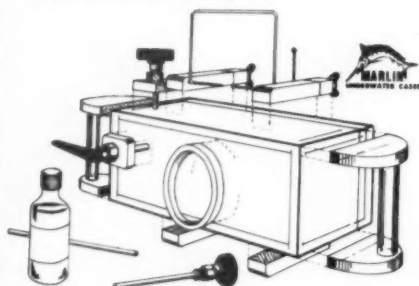
NEW PRODUCTS 1960



SCUBAIR SINGLE HOSE TWO-STAGE REGULATOR—Features a minimum of moving parts, compact high pressure and demand valves. Depth compensated, automatic, precision air reserve is built into the unit. New "Quick-Klip" allows immediate removal of cover to facilitate inspection and maintenance. Air connections are "O" ring sealed. Contains attachment to Scubair pressure gauge. Price—\$37.50. Produced and Dist. by Healthways, 3669 Seventh Ave., Los Angeles, Calif.



SEA-TOW "MINNOW"—This battery powered underwater propulsion vehicle provides speeds of 2.2 knots, continuous duty for 1½ hours, diving depths of 100 feet, quick knock-down for charging, and air savings of 50% or higher when used with the handle as a tow. **ADDITIONAL FEATURES** when strapped to air tank with quick disconnect clamps; greater speed, complete visibility, freedom of both hands and flippers, increased maneuverability, greater stability for picture taking or spearfishing. Manufactured by: Bulow Electric Company, 11000 Capital Avenue, Oak Park 37, Michigan.



MARLIN — "Finish-it-yourself" camera housings. The bodies are already assembled from rugged, 3/8 inch Plexiglass. Extra Plexiglass, cement, solid brass controls, "O" rings, and spare parts are included to allow the diver to custom fit his own camera to the case. The MARLIN Housing will accept all popular 35mm cameras. Inside dimensions of the case are, 6"x4"x4½" high. Price, \$37.50 from **UNDERWATER SPECIALTIES CO.** P.O. Box 13411, Tampa, Fla.



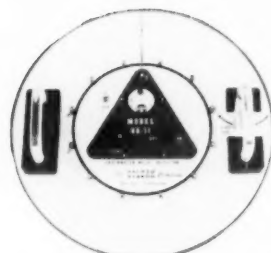
NEW SHARK REPELLENT—This new compound is being packed in small pressure cans to be worn on the diver's belt. The repellent has been very successful in tests on purse seiners operating in Mexican waters. The mixture has been tested in Florida on sharks and barracuda with success, and some were noted to dodge the compound and leave the area as it is emitted in the water. Price, \$3.00 Postpaid, from: Seiner's Friend Co., Rm. 205, 112 W. 7th Street, San Pedro, Calif. Dealers inquiries invited.



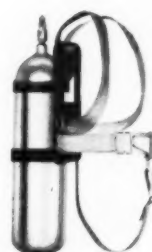
THE NEW DACOR MASK—Has been designed for the greatest possible comfort and for an excellent face seal to prevent water from entering the mask. Maximum visibility with tempered glass and highest quality rubber are added values to this mask. Retail price, \$4.95.



SPORTSWAYS introduces its new 17 jewel **MARINER '600'** Divers Watch. The MARINER is manufactured in Europe to Sportsways specifications. It is a self-winding automatic with an anti-magnetic stainless steel shockproof case. It has had both pressure and waterproof tests to depths of approximately 600 ft. The luminous markings make it easy to read and the time lapse bezel and calendar window are special features which the diver and sportsmen will find invaluable. The pliable, perforated heavy-duty Black plastic band gives maximum comfort, yet is almost indestructible. The MARINER '600' Watch has a two year factory guarantee against defects in workmanship and material. Price \$85.00.



ELECTRONIC UNDERWATER METAL DETECTOR—Model UD-11, has been developed by The Goldak Company, Inc., Glendale, California, electronic manufacturers. Underwater salvage operators, inland lake divers, river prospectors and skin diving clubs will find many applications for the Model UD-11. For further information regarding the Goldak Model UD-11, write: The Goldak Company, Inc., 1544 West Glenoaks Blvd., Glendale 1, California.



SCUBAPAK HARNESS — Completely new design by Richard E. Anderson that combines safety, comfort and utility. The Scubapak is made of a single sheet of specially-compounded corrosion-proof aluminum. A protective smooth-surface coating of resilient high-impact plastic makes the back plate impervious to salt water and the elements. Equipped with Healthways improved Jet-O-Sen quick release buckle and a crotch strap that may be used at the option of the diver. Price \$15.00.



LIQUID POWDER is a new product manufactured and distributed by Midwest Skin Diving Supply Co., 405 South Wabasha Street, St. Paul, Minnesota. This wet suit super slip-in liquid comes in a large size plastic bottle. When depressed, the specially designed pressure spray top sprays a thin coat of homogenized foam. Just spray it on your arms, legs or suit and easily slide into your suit. Guaranteed not to harm even the most delicate skin or wet suit—it's anti-bacterial. \$2.00 p.p. from Midwest Skin Diving Supply Co.

MEDICINE UNDER PRESSURE

By Walter R. Kirker, M.D.

There have been many requests recently concerning food and diet practices surrounding diving, and today I would like to comment on this subject. Since everyone eats at least three meals a day, we all consider ourselves experts on the subject of eating. There actually is no major problem other than a number of misconceptions in relation to our different dietary habits.

One of the most popular practices has been the consumption of large quantities of meat, supposedly destined to replace the protein "losses" incurred during severe muscular work. This practice has been traced back to the fifth century B.C. Until that time, the diet of the Greek athletes had been mainly vegetarian with meat eaten only occasionally as relish. The change came shortly after the Persian Wars, when a trainer, Dromeus of Stymphalus, (who twice won the long race at Olympia, in 456 and 460) introduced the meat diet.

The influence of the spacing, number and relative size of meals has been studied in relation to prolonged physical work, and we can all agree that diving can be considered an endeavor that requires prolonged physical activity. It was concluded that a pattern of five meals a day, but smaller in quantity, led to a total work output greater than that obtained with three meals a day. Further reduction to two meals a day (by omitting breakfast) led to an inferior performance, particularly during the morning hours. We are able to apply this information in preparing for a major skin diving event by developing a five meal a day pattern of light meals never omitting breakfast and eating about three hours prior to the event.

Carbohydrate is known to be oxidized preferentially for muscular work. It has been established that while carbohydrate yields only half as many calories per gram as does fat, the burning of carbohydrate yields more calories per litres of oxygen than does the burning of fat. On theoretical grounds at any rate, one might expect that in a sport in which the oxygen supply to the tissues is a limiting factor, such as diving, using carbohydrate as the chief fuel might prove to be advantageous.

When it is recalled that the average diet of the American athlete contains approximately 40% fat, and usually more when the caloric intake is greater than normal, and when it is remembered that the usual practice of eating is to load the diet with high fat foods (meat, eggs and milk) there are serious questions as to whether the current diets for strenuous muscular activity are even optimal for our needs.

As I stated before, one of the most persistent misconceptions in nutrition is the theory that protein is the primary source of muscular energy. We persist in this belief, in spite of 100 years of experimental evidence to the contrary. While the performance of athletic exercise does not require increased pro-

tein consumption, the increase in muscle mass associated with training and conditioning does, like all growth processes, require an adequate supply of good quality protein. I am assuming that all the readers of "Skin Diver" have at least a normal intake of protein foods.

I will continue with this discussion in the next issue, hoping to cover vitamins, special "health foods," crash diets, etc.

Editor's note: Although Dr. Kirker cannot answer letters individually, your medical problems related to diving will be discussed in future columns. Questions should be addressed to Dr. Kirker in care of "Skin Diver Magazine."

Ascension of the struggling octopus, skewered on the end of a speargun, as dramatically photographed by Robert Merlo, Torino, Italy.



DIVERS' FASHIONS



TOTE HAT



KOHLER SHIRT

Centered around the dive this year is a wide variety of clothes designed for action.

TOTE HAT . . . now the little woman can tote everything on her head. Leaves both hands free to carry that heavy lung for hubby. High crowned straw "Tote Hat" sports band which totes cigarettes, matches, lipstick, sun cream, cash purse, comb and under the crown, a mirror. Comes in black or natural straw, the bands in blue, black, pink, kelp brown. Sells at \$8.95 from Cole of California. Underneath the hat is a high fashion swim sheath that shows every curve. Fast drying, lightweight and carefree. Cole of California at \$22.95. Available in vanilla, bean brown, Cole black, royal blue.

KOHLER SHIRT . . . here's a little dandy from the Underwater Sports Shop, Long Beach, Calif. It's an original Sweat Shirt by Kohler. Kohler draws an original cartoon on the back and then sends it straight to you. No two alike. Here's a real conversation piece and only \$7.95. What more could the intellectual diver want than a Kohler original and the "Compleat Goggler," the first book on diving, available from the Underwater Bookshelf, No. 27.

BEACHNIK SWIM SUIT . . . form-fitting trunks with square cut legs in a new Hawaiian length. Here is Jantzen's "Beachnik," cotton knit swim trunks with a simulated fly front, wide striped belt with handsome brass buckle and handy coin pocket. Available in sizes 28-36 at \$7.00 in red, green, blue and black.

BOATER SHIRT . . . designed for the man with diving on his mind is the "Beachnik" boater shirt with calf length surfing pants. The boater is fashioned of twill knit (100% cotton), has short sleeves, and boat neck. Pants are of 100% cotton gabardine with fly front, elasticized knit side inserts, front half belt, button flap coin pocket and back patch pockets. Boater is available in s-m-l at \$3.95; the surfing pants in sizes 28-40 at \$7.00.

BIKINI WITH JUDO PANTS . . . judo pants reefed in at the waist with a sturdy draw-string . . . easy on, easy off for the beach. Bikini secured with a built-in bra. Fabric is sturdy Sailtone. Bold blazer stripes in vibrant colors: lagoon blue, coral reef, sun gold, kelp brown. Judo pants style No. 2944, sizes 8-16, \$12.95. Bikini style No. 6044, sizes 10-16, \$12.95. From Cole of California.

[For complete information where to obtain above fashions write or call SDM.]



BEACHNIK SWIM SUIT



BIKINI with JUDO PANTS



BOATER SHIRT



U. S. DIVERS CO. ENLARGES

PLANT MOVES TO SANTA ANA, CALIFORNIA

Members of the industrial development division of the Santa Ana Chamber of Commerce, government officials and prominent civic leaders welcomed U. S. Divers Company to Santa Ana during colorful ground breaking ceremonies for the 45,000 sq. ft. facility.

U. S. Divers, manufacturer of the "Aqua-Lung," a name practically synonymous with underwater breathing equipment, will soon move into its new building located one-quarter mile East of Harbor Boulevard on Delhi Road.

The building is scheduled for completion on February 15, 1960. The structure will house the main office, production and warehouse for U. S. Divers. Mel Burns, President of the organization, said the plant will be located on a five acre site which will allow the initial 45,000 sq. ft. floor area to be doubled in a planned 5-year program.

Unusual features of the plant are the incorporation of two test pools. One, 15 ft. x 30 ft., 10 ft. deep, and the other, a diving tank, 12 ft. x 12 ft., and 30 ft. deep. The laboratory will have, in addition to the unusual testing equipment, a recompression chamber to simulate diving conditions.

The Santa Ana location was selected because of the availability of land, good climate, and overall accessibility to Southern California industry and transportation facilities. The plant will be only minutes away from the Newport Harbor area which will be convenient for any ocean tests and excursions.

The president of U. S. Divers Company said that the company did five million dollars worth of business in 1959 and expected a 60% increase in 1960. The firm will have one hundred employees at the opening of its first facility.

U. S. Divers, which sells its products worldwide, produce a complete line of products for the diver, including exclusive manufacture of the "Aqua-Lung," made popular by internationally famous Captain Jacques Cousteau, author of the book and producer of the movie "The Silent World."

This coming season, U. S. Divers will distribute products from four warehouses, the new home office in Santa Ana; Stamford, Connecticut; Chicago, Illinois; and a Canadian facility.

U. S. DIVERS CO. 1960 PROMOTION PROGRAM

The following are a few of the promotional features that U. S. Divers Co. will be offering their distributors throughout the country:

(1) The "Aqua-Lung" show: a series of 13 half hour TV shows is being prepared. The series will be available free to company distributors, who will be able to use it on their local channels. They will only have to pay for the TV time. They will use all the advertising time for their own advertising.

(2) A complete promotion and training program will be available to the distributors. This will be a very informative document designed for the dealers.

(3) A training film which will consist of all the training sequences of the TV show.

(4) The two books, "Diving with the Aqua-Lung" and "Diving with Safety" will be condensed in the new book, "Aqua-Lung Diving."

(5) Color copies of the underwater movie, "The Silent World," will be made available to distributors in 16mm and sound for an exceptionally low price.

(6) A set of three beautiful underwater 40"x40" pictures will be available either for display or sale.



By **DON BEDWELL**
Photo by **Herb Condray**

Education, it seems, is a "deep" subject for a group of Ozark skin divers. So much so, in fact, that the Ozarkians held their graduation ceremonies—baccalaureate and all—beneath the surface of a Missouri lake. Instead of wearing the traditional cap and gown found on campuses, the divers were more appropriately toggled out in lungs, fins and masks. Moss replaced the more common ivy setting, and prizes for diving achievement were issued in lieu of diplomas.

The group was composed of graduates of a school for scuba divers conducted by Glen C. Erwin, who has been carrying on a vigorous and apparently successful campaign to prove that skin diving can be practiced even thousands of miles away from the clearer waters of the coastal areas. To Erwin, who is better known around his home town of Springfield, Mo., for his exploits with a bow and arrow, Ozark lakes offer a challenge that he refuses to let pass unanswered. It's his contention that fresh water lakes offer excellent diving, and he's out to prove it. An accomplished archer, he found out some years ago that spearfishing offers equal sport to hunting deer with a bow and arrow.

Ozark lakes, of which there is an abundance as the result of recent Army Engineer water control projects, suggested to him that there was an opportunity in the area for the creation of an organization of divers. A few dives convinced him that the water in many places was clear enough, and that the fishing was excellent, to make the formation of such a group worthwhile.

As a dealer in sports equipment, including diving gear, Erwin was well equipped to sponsor a school of diving. In return for the entrance fee, the students were furnished tanks and

regulators. They brought their own masks, fins and snorkels. Finding a suitable place to hold classes proved to be a problem. Although Springfield, a city of over 100,000 in southwest Missouri, is flanked by three large lakes, city ordinances prevent their use for swimming or diving purposes. The larger lakes to the south were too far from the city to be suitable for regular meeting places.

Erwin finally settled on a rather surprising choice of pools—the one at the local YWCA. It was chosen because of its availability during the evening hours. Classes were held once weekly for eight weeks, during which time the beginners learned the fundamentals of diving and became familiarized with their gear in the safe confines of the small pool. Classes dealt with all phases of diving, covering both theory and practice.

Although the YWCA pool proved to be a satisfactory training ground, its limitations were obvious. When the schooling period drew to a close, the more than 30 students decided to stage a graduation field day at Bull Shoals Lake, approximately 100 miles from Springfield on the Arkansas border. Actually, the field day extended over a complete weekend. Erwin and several of the more experienced divers arrived early Saturday morning and went about the job of selecting a secluded channel which was clear enough for satisfactory diving, then setting out buoys with warning flags.

Before the day was over about half of Erwin's charges had arrived to try out their wings—water type—under actual diving conditions. The group, including several married couples, logged in quite a few hours underwater getting the feel of their equipment. The thrashings of over a dozen divers soon turned the shallow water near

OZARK DIVING

the edges into a muddy soup, but by then the fledgling divers were seeking the deeper water in the center of the slough. More of the student body arrived Sunday morning to join the more hardy troupe that had camped out on the lake near Theodosia, a Bull Shoals resort area.

Sunday activities included a treasure hunt, with prizes awarded to divers surfacing first with brightly painted cans that had been submerged in the lake. A few of the cans evaded the divers completely in the murk, but most were found. A depth contest, supervised carefully for safety, was held for those who wished to participate. A slate was lowered on a long rope, and divers "signed the register" with a piece of underwater chalk as they went down. Several signed in at 60 feet, a few at 70.

Several "lunkers" were taken during a fishing contest Sunday. A variety of spears and fishing guns were utilized to bring in "rough" fish, the only fishing open to skin divers in Missouri. Divers are not allowed to spear game fish, yet still perform a service to anglers by helping to clear the lakes of less desirable fish, many of which are harmful to game fish. Erwin cautioned against venturing across the middle of the lake into Arkansas territory, where even possession of a spear gun is illegal.

A Conservation Commission agent was a guest of the skin divers later in the day. He saw a demonstration of the lung, then went down himself in the company of other divers. In return, he explained to them some details of the game laws relating to underwater fishing. The weekend of diving didn't end until late Sunday night, when even the most stubborn couple, sunburned and exhausted, packed their tent and scuba equipment and set out on the winding highway for the return trip to Springfield.

The young men and women who dived into the lake Saturday as rookies, emerged Sunday night as experienced divers. Certainly, many more hours will be needed before they will smooth off the rough edges of their diving technique and become real veterans. Still they've graduated from the basic schooling of the sport, and are ready to form the nucleus of a diving movement in the Missouri Ozarks. Instead of a diploma, the Springfield divers found they had received a set of keys to an underwater world. »



Portion of the Dacor facility includes the above regulator assembly department. Testing and research departments are in the background.

DACOR MOVES, EXPANDS

New line includes masks, fins, back-packs, gauges



Sam M. Davison, Jr.

SEVERAL months ago, Dacor Corporation, Evanston, Illinois, moved its factory into a new building located at 9216 North Laramie Avenue, Skokie, Illinois, where production and warehouse facilities are increased by approximately 500 per cent. "The tremendous growth of the diving equipment business during the past several years and our confidence for further growth in the future has made this expansion advisable," states S. M. Davison Jr., General Sales Manager. During the past two seasons, we have not been able to produce a sufficient quantity of Dacor Lungs to supply the demand and were in a back-order situation during the spring and summer months. With increased manufacturing facilities, Dacor plans are to build up a large pre-season inventory of all products and to continue on a two shift production basis, if necessary, during the peak demand months of the summer season.

It has been the policy of Dacor to manufacture only high quality prod-

ucts and not to produce items for the low priced market. Following the introduction of the Dacor double diaphragm two stage regulator five years ago, with its small and unique type mouthpiece and non-return valves as standard equipment, Dacor added its wrought iron tank stand, depth compensating reserve valves, and, most recently, a new design of pressure gauges to the line.

For the 1960 season, Dacor will add many other new exclusive items for their complete line. These products will include three sizes of a new full foot fin available in black or yellow of the highest quality rubber; a face mask designed for added comfort and visibility; a new deluxe pressure gauge, all chrome plated and with a dust cap, in addition to the present standard model with brass finish.

"In our opinion," states Mr. Davison, "the industry has long wanted a low height depth gauge which would be accurate at depths to 200 feet and which would not be too expensive." The new Dacor "Thin Line" depth gauge will be less than one inch high and will be made of brass case, chrome plated and fully guaranteed. There are two models, 100 ft. and 200 ft. depths.

Other items will include underwater watches, knives, all rubber snorkels with advanced design mouthpiece, chain vise for securing tank in removal or installation of valves, and a list of accessory items which are in popular demand in the industry.

A new D-PAK and harness assembly is announced. It consists of the D-PAK made of a heavy gauge aluminum back plate with wider shoulder straps which are adjustable and which are attached to the D-PAK, properly spaced for shoulders. This new assembly will stop rolling of tank on back and will hold tank securely with comfort. The D-PAK provides a hand grip space for easy carrying of the lung. All single tank lungs will have the new D-PAK harness assembly as regular equipment at no additional cost. It will be sold separately, complete with harness and bands, at a retail price of \$17.95.

Notwithstanding the increased cost of labor and materials and the extra costs added in producing the Dial-A-Breath regulator and the D-PAK assembly, Dacor will retain the same retail prices on lungs and regulators that prevailed in 1959.

With increased public interest, many additional training programs, new diving clubs being formed each week, and new channels of distribution showing great activity in diving equipment, the growth in the sport of skin and scuba diving is assured.

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ANNOUNCEMENTS and COMING EVENTS

CAROLINA ISLANDS EXPEDITION SEEKS YANKEE DIVERS

An underwater expedition to the Carolina Islands is being planned for 1960-61. Among the promoters of the expedition is Dr. Herman Heberlein, author of "Unterwasser Welt."

The organizers are seeking American divers to accompany them on the expedition. Further information can be obtained by writing Erhard Weber, Grafstrasse 65a, Berlin, Germany. ➤



Explorer Post 13 skin divers of Shelby, Ohio, set the scene for Life Magazine photographers.

"LIFE" MAGAZINE FEATURES DIVING

"Explorers of a weird world below" was the display line under a full two page, full color, photograph of several scuba clad divers in the December 28, 1959 issue of Life Magazine. This was the Life special 2-in-1 issue and the section on diving was part of the explanation of where people spend their relaxation time. Divers featured in the color photograph are members of the North Shore Frogman's Assoc. and the pic was taken at Pigeon Cove, Mass. The caption under the photo stated that "This year a million skin and scuba divers will plunge into U.S. waters there—weightless in an alien element—to drift, glide and pry into mysteries of the sea."

Shelby, Ohio, Explorer Post 13 divers were also featured in this issue of Life. AMF-Voit had a portion of the large advertisement of AMF featuring their leisure time products and the Explorers were shown donning their Voit underwater equipment. ➤

LOS ANGELES INITIATES CLASS COMPETITION

The Competitive Skin Diving Committee, Inc., of the Greater Los Angeles Council announces that the 1960 spearfishing contests for the Los Angeles area are going to be held on a Class A & B basis for the first time. The intent of this departure is to build up experience among the competitive minded divers by letting divers compete in at least two big meets. This will also give the Sunday diver that doesn't have the experience or time to train a chance to compete with divers of equal ability.

The method of classification is as follows: At the first competition of the year all teams will compete against each other and the results of this meet will determine their classification. The top half of the competing teams will be classified as Class A and the other half Class B.

At the council championships the Class A and Class B teams will dive together but will be competing for separate trophies. Trophies will be furnished for top teams and individuals in both classifications.

The committee also announces that this year a club may enter as many teams as they choose in the competition.

Classification Competition—May 1st on the ocean side of Cabrillo Beach, Los Angeles.

Council Championship—May 15th at Salt Creek below South Laguna.

The meet rules for the 1960 season will be the same as in past years. The 1960 competitive year will be organized under the auspices of the Underwater Society of America rather than the A.A.U. as in the past. ➤

DISCOVERY OF RARE SEA SHELL REPORTED

Dick Adcock, skin diving outfitter and instructor in La Paz, Baja California, Mexico, found a beautiful looking shell in the vicinity of La Paz Bay, and gave it to Miss Myra Keen, Professor of Paleontology and Curator of Malacology at Stanford University, who was under the auspices of "The Belvedere Scientific Fund" touring La Paz beaches and nearby areas collecting and classifying different types of shells found on the Baja California Peninsula. Upon examining the shell given her by Adcock, Miss Keen found it was an exceptionally fine specimen of "Cypraea Isabella Mexicana." This unusual shell had been found only in Tres Marias Islands, Revillagigedo, Clipperton and Galapagos and only one had been found in San Lucas, Baja California.

News of this rare discovery will undoubtedly awaken great interest among shell collectors. ➤

BLUDWORTH MARINE ANNOUNCES NEW SERVICE AND PARTS SUPPLY ORGANIZATION

Bludworth Marine Division of Kearfott Company, Inc. has announced that, effective January 4, 1960, its service and parts supply will be carried on by States Electronics Corporation as an independent operation.

States Electronics Corporation, with offices at 846 Magie Avenue, Elizabeth, N. J. and at 11 Jacob Street, New York, N. Y., will also service Kelvin Hughes Echo Depth Sounders, Cossor Radar, British Thomson-Houston Radar and Magneti Marelli Radar throughout the United States at Bludworth Marine's present base ports.

Bludworth Marine's New York service personnel, of long experience, are joining States Electronics Corporation with Fred Rosenka as Service Manager, in charge of service operations, and Leon Armstrong as Purchasing and Export Manager.

Bludworth Marine's large ship echo depth sounders and direction finders and specialized survey depth sounders together with other existing and planned new products for the marine field will continue to be sold by Kearfott Company, Inc., 1500 Main Avenue, Clifton, New Jersey. ➤

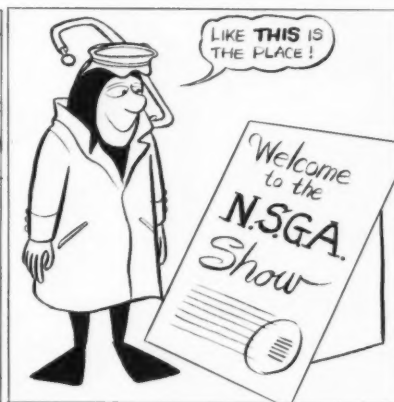
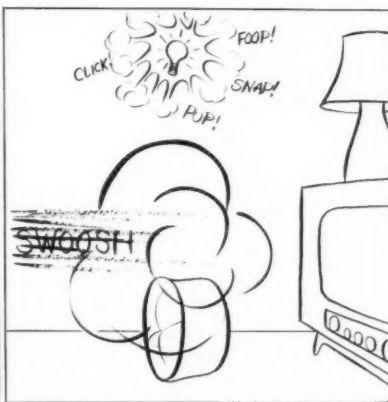
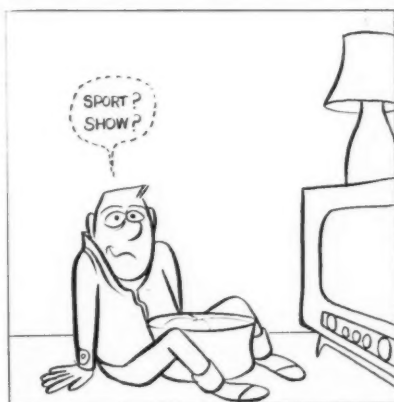
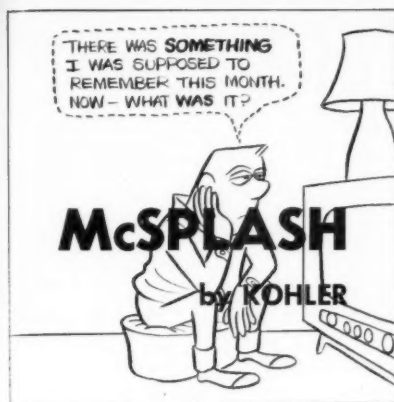
SOUTHERN CALIFORNIA SCHEDULES MOVIES

The Competitive Skin Diving Committee, Inc., announces a public showing of Skin Diving and Surfing movies for the evenings of February 26 and 27 at Jordan High School, 6500 Atlantic Blvd., Long Beach, Calif.

The Skin Diving movies will feature Januzzi, the world depth record holder from Italy, spearfishing in the Mediterranean and includes shots of Januzzi taking two 40 pound jacks in one dive at 80 foot depth.

Terry Lentz, the World Spearfishing Champion, is also featured in shots filmed after the 1959 World Championships at Malta. Other top movies will be shown including the taming and hand feeding of eels at Catalina.

The 45 minute surfing movies have some of the most exciting footage ever shot of surfing on the storm surf at Hawaii. The starting time will be 8:00 p.m. both evenings and tickets will be available at the door. ➤



EMPIRE STATE TROPHY DINNER-DANCE

By Archie Orenstein

On Saturday night, December 5, 1959, the Empire State Underwater Council, Inc. presented their spearfishing championship awards. The gala dinner-dance was attended by over 200 at "The Ideal Spot" in Forest Hills, Long Island. President Don Marchese spoke for all attending when he warmly thanked Morton Michaels, Dinner-Dance and Journal Chairman, for a job well done. The awards were for the championship held June 7, 1959 at Montauk, Long Island. Since the first dinner-dance was held three years ago, this mid-winter get-together has been thoroughly enjoyed by the now 74 member clubs.

The 1st Place Central Skin Diver Trophy was won by Herb Rakebrand, Dick Ferg, and Frank Perez of the Long Island Dolphins. The 2nd Place Aquaparel Trophy was won by Manny Miller, Mel Malaxos, and Phil Shapkin of the Manhattan Skin Divers. The 3rd Place Harvey Trophy was won by Tom Lindtvit, Ed Harrison, and Paul Neilson of the Long Island Skin Divers. The Largest Individual Fish Richard's Trophy was won by Herb Rakebrand of the Long Island Dolphins. The 1st Place Council Perpetual Trophy was won by Long Island Dolphins.

The Long Island Dolphin Perpetual East Coast Championship Trophy was won by the Long Island Dolphins. The Photography Awards were won by Frank Florio (Black and White Still), Lynn Shipp (Color Still), Murray Seliger (Motion Picture), Noel Gaumond (Color Slides).

The Empire State Underwater Council, Inc. presented its highest award, the Achievement Award to June Kieser, the Council's Secretary in grateful recognition for her many years of devoted and faithful service.

COUSTEAU VISITS SOUTHWEST

A lecture by Capt. Jacques-Yves Cousteau has been scheduled by the Southwest Council of Skin Diving Clubs on February 21. The lecture being sponsored by the Houston Underwater Club will be at 8 p.m. in the Cullen Auditorium at the University of Houston, Houston, Texas.

All clubs in the Southwest Council area wishing to attend the event may obtain further information by contacting Joyce A. Sims, 2210 Kipling, Houston, phone JA 8-3319.

Tickets are available at \$1.50 each from any member of the Houston Underwater Club and at the Village Sporting Goods Store, Houston.

SALVAGE DEMONSTRATIONS AT NYC COLISEUM

The Coliseum in New York City is featuring their annual Mirror Outdoor Exhibition, February 20th thru 28th. The show will highlight Skin Diving among other outdoor sports.

For the first time at this show, the booth for Caribe-Aqua Association will have a six foot tank on the floor in which there will be diving demonstrations using attractive models. Featured in the demonstration will be the use of underwater blowtorch and other salvage equipment, diving technique and use of equipment, and complete information on Caribe-Aqua Association's First International Treasure Hunt in San Juan, Puerto Rico.

UW SHOW COMING TO NEW YORK

For the first time in the New York area a selected program for skin divers will be shown on March 22nd at Manhattan Center, 311 West 34th Street and Eighth Avenue, at 8:30 p.m.

This program, sponsored by Caribe-Aqua Association and Stanton Waterman, noted underwater adventurer and lecturer, will feature Stanton Waterman's exciting film "Water World." This unusual and informative color film, taken in the exciting tropical waters of the Bahamas was four years in the making. On the same program will be the first film showing in this country of France's new Underwater Commercial Salvage Operations with scuba; a film on Puerto Rico giving advance news about Caribe-Aqua Association's First International Treasure Hunt for Skin Divers; plus other exciting short subjects and guest stars from the stage and diving world. Admission \$1.75.

For information and purchase of tickets contact: Caribe-Aqua Association, Rt. 17, Rochelle Park, N. J. Telephone Hubbard 9-7330 or BU 8-4194 in N.Y.C.

UNDERWATER FILMS AVAILABLE TO CLUBS

"Discovery in Bermuda" includes some of the most fascinating scenes ever captured on a movie film strip. Included in this Johnson Motors 25 minute epic of the Atlantic jewel island are underwater reefs, coral formations, aquatic animal studies, spearfishing, treasure trove hunting and all of the exciting adventures to be expected of the Bermuda underseascape. Available to all diving clubs and organizations free of charge by contacting Mr. Chet Palmer, in care of Johnson Motors, Waukegan, Illinois.

LEGISLATION CAN BE A BOOBY TRAP

By **BILL BARADA**

The following article is the opinion of the author and does not reflect the official position of any organization. Bill Barada has resigned his affiliation with all skin diving organizations to be able to speak his mind freely without committing others.

IN 1950, one California club went before the Fish and Game Commission and requested that breathing apparatus be outlawed for taking abalone and lobsters. This club represented themselves as speaking for all California skin divers and, as there was no opposition, it passed easily. As a result, the new and struggling sport of skin diving, already saddled with too many unreasonable laws, found itself confronted with an additional restriction.

The law came as a complete surprise to all skin divers except the few who instigated it. There was no real statewide organization to determine the opinions of the majority. A few clubs contacted each other and held a "council". From this first meeting grew the official Council of Diving Clubs designed to serve as the "sounding board" for all skin divers in the State.

The law restricting the use of breathing apparatus proved to be a bad law hastily thought out and proposed. It was not enforceable. A skin diver could use his lung for any purpose; then remove it and claim he made his catch with a snorkel. For this reason it only encouraged the outlaws and bandits. It was discriminatory, preventing sportsmen from taking their legal limit of game in deep water. And the commercial abalone divers and lobster fishermen loved it. The only conservation served by the restriction was conserving game so it could be taken by the commercials.

It required two years of hard work, hundreds of hours of diver's time, and a lot of money out of diver's pockets before the law finally was repealed.

Now that we have an official Underwater Society of America, any similar mistakes will be on a national scale—and a bad law could boomerang into tragedy for our sport. Before any legal action is requested in connection with skin diving the matter should be carefully analyzed for possible repercussions. Remember that legislation is actually a request to restrict someone's activities—your own—or some other group's. It is all too easy to obtain restrictions on your activities without any intention of doing so. Let's take a sample case:

Many skin divers, including members of the Underwater Society Board

of Governors, are advocating Coast Guard recognition of the **DIVERS FLAG**. One such recommendation suggested 100 ft. as the distance which boats should be required to maintain as clearance around such a flag when it is properly displayed. This recommendation is now under consideration for adoption.

At first glance this suggested law sounds wonderful. It has good, strong reasons for being advocated. Divers continually run the danger of coming up in front of a power boat and being chopped to pieces by the propeller. Case histories of such accidents are available in every locality. When the flag is displayed, many boats simply use it as a target, increasing the danger—hence the old war cry, let's pass a law.

Now let's look at what such a law would accomplish if adopted by the Coast Guard and enforced nationally and internationally. Rules would be printed in detail and distributed across the nation. Boat owners and boat clubs and boat manufacturers would be alerted. Even shipping operators and commercial lines would receive copies of the new **DIVERS FLAG** law. Coast Guard officials would enforce it to the letter. Then one day a group of divers each displaying a **FLAG** would enter a lake or channel . . . And effectively block all boat traffic in that channel.

The immediate and predictable result would be a deluge of laws outlawing skin diving in any area with moderate boat traffic. **SKIN DIVING WOULD BE OUTLAWED IN ALMOST FIFTY PERCENT OF THE WATERS NOW AVAILABLE.** The law would be effective and probably a permanent tragedy as it would be almost impossible to repeal. Skin divers would be safe—and dry.

There are certain dangers inherent in any sport, and skin diving is no exception. Most of these dangers can be reduced by education and publicity without resorting to the drastic measures of legislation. Eager, well meaning attempts to make diving safe for imbeciles, knot heads, and glory hunters can have us all restricted to swimming pools and rock quarries.

Another "safety" measure receiving a lot of **LET'S PASS A LAW** lip service is a **PURE AIR BILL**. Unscrupulous shops are filling tanks with air that is literally poisonous when breathed under pressure. Divers are getting sick and perhaps a few are receiving perma-

nent injury to their health, (however this is difficult to prove), the shops should be stopped, so—let's pass a law.

Take a look at what will probably happen . . . and remember that it is extremely easy to restrict your own activities. First, minimum requirements for pure air must be defined. (Fortunately these have been determined by the California Council after almost ten years of research and consulting with every major diving institution in the country.) Then a method of testing the commercial air regularly must be determined and acceptable testing stations approved. When the law is passed, state inspectors will be required to inspect air stations at intervals, the stations must be licensed. This service will cost money. No government service is ever given free (in spite of the fond illusions to the contrary). The shops will pass the license fee and inspection costs on to you—their customers—and your diving costs you more than it already does. This is only the beginning. Let any government agency find a new source for employment and revenue and the thing grows like cancer. Let's keep the bureaucratic noses out of skin diving.

How much more simple would it be to handle it without a law? Why not warn a shop that is pumping bad air to clean it up—or its name will be circulated to all the clubs. Take the profit out of bad air and it either gets clean, fast, or the shop goes out of business.

Almost any skin diving problem can be handled in some such manner. Publicity and education are usually more effective than laws. If bandits could be stopped by legislation, crime would have disappeared years ago. The same reasoning applies to safety. The proposals to require a license before a person can purchase a scuba are ridiculous. That is like requiring a license to go swimming. More people drown from swimming than will ever die from scuba.

Safety rules are fine and should be learned. But if a knot head wants to dive to 300 ft, dive off a rocky cliff, or punch a tiger shark in the nose; all the laws and education in the world won't save him. Why make it tough for the rest of us for the benefit of a few hard-noses that can't be helped anyhow?

If this piece sounds like I'm worried—that's only because it's true. I have enjoyed skin diving for over twenty years, since 1935, and hope to enjoy it for another twenty years, if the regulations and restrictions don't run me out of the water. ➤

REBELS ATTACK U. S. S. CAIRO

By **BOB ROBINSON**

THIS DIVING story actually began in 1861, when a certain Captain Eads of the United States Navy was commissioned to build seven ironclad gunboats for service against the Confederate States of America. One of these river boats, the Cairo, was eventually to find its way to the Yazoo River for the Battle of Vicksburg.

On the morning of December 12, 1862, the Cairo was proceeding north up the Yazoo River for a campaign against Yazoo City, Mississippi. The Captain, against orders, put his ironclad Cairo in front of his escorts, and the chance the Confederates were waiting for was at hand. Using makeshift mines moored three feet under the surface and operated by a manual pull-wire by Confederate soldiers hidden behind the levee, the Rebels waited for a collision path. The Cairo passed over a mine, it was exploded, and blew a hole in the bow of the proud ship. The Captain tried unsuccessfully to save his ship, but she sank in twelve minutes from the time of impact. All hands escaped but, because of small arms fire, were unable to carry any belongings ashore. The next day, the Union Navy sent some gunboats up to the site and pulled down the smoke stacks so as to hide the location of the ship, and the cannon on board, from the Confederates.

The Cairo lay undiscovered and peaceful in her watery grave for 94 years. Then Mr. Warren Graham, a historian for the National Park Service and Don Jacks, an old river expert, began studying the Records of the War of the Rebellion, the official reports from officers of both sides of the war.

The site was discovered by reading the reports to within a three mile



Preparing for a dive into the murky Yazoo River is diver Ken Parks while the author, Ed Barss and Don Jacks wait aboard the life line boat. Parks (left photo) comes up with souvenirs from the old gunboat.

stretch of river. Mr. Jacks and Mr. Graham then proceeded to float down the river, using a small compass lying in the bottom of the boat as a metal detector. As the boat floated over the Cairo, the compass deflected about 180° and they knew they were over the wreck.

Work was discontinued until 1959, when Ed Barss, a research historian for the National Park Service, sold the idea of exploration to Ken Parks, a skin diver and television executive from Jackson, Mississippi. In October, Parks and Skeeter Hart dived on the Cairo to be sure of the find. They recovered some rusted spikes, but the cold water forced them to abandon the diving.

On November 5, 1959, an exhibition equipped with wet suits, lights, and extra tanks was formed to go up-river to visit the Cairo once again. Leading the trip were Barss and Jacks to find the Cairo. Pete Godwin and Bob Paley were to handle tanks, lines, and any other necessary gear. Divers Parks and Hart were to go down, and the author was to act as safety man and emergency diver.

We started on a very remarkable and wonderful day. The temperature was 84° only two degrees from a record high for November, and the Yazoo

River was the clearest it had been in fifteen years.

After an hours boat ride we anchored over the wrecked Cairo, and divers proceeded down into the murky river. The first recovery was an aperture cover which covered a peep-hole on one side of the pilot house. The house is octagon shaped, and soon we had five of the eight doors on board our skiff. The metal was in nearly perfect condition and we all rejoiced in such a definite find. Deck boards with old square iron nails were soon brought up, and Parks located the broken ends of the smoke stacks. Entry into the pilot house was gained, only to find it full of sand and logs, collected over a 97-year period.

The ship remains intact, and future plans include getting jet blowers from the Corps of Engineers, so we can blow the sand out and perhaps find some historically valuable items. The plans for these gunboats were burned, and nobody in the world knows their design, nor do they know what navigational instruments they carried. Maybe in 1960 the answers to many such questions will be answered, but one thing is for sure—the Rebels will continue to attack the Cairo until she reveals her long held secrets.



Michigan State Police officials look on as the June 1959 class of 24 Troopers receive their basic training from Don Davison. —Kuchirchuk Photo.



Michigan boasts . . .

56 UNDERWATER TROOPERS

by DON DAVISON

IN 1957 the State of Michigan became alarmed by the increasing number of casualties in water sport activities and decided to institute preventive measures. In August of 1957, two carefully selected State Troopers from each of the eight Michigan State Police Districts were called to the headquarters post at East Lansing to undergo intensive training to qualify as Water Safety Specialists. These men were selected on the basis of their swimming ability, exceptional physical condition, and psychological qualifications for this hazardous added responsibility, and each possessed a current Senior Life Saving Certificate. They were promised no reward for accepting these added duties and were admonished to always remember that they were Michigan State Troopers trained as Water Safety Specialists, and not just skin divers who happened to be State Troopers.

For one week of this rigorous training period they were under the direction of Trooper William Carter, then an instructor of the Police Training Bureau and now Aide to the Governor, and Don Davison, a Water Safety Instructor and representative of the Dacor Corporation, manufacturer of diving lungs and other underwater equipment. For 14 to 16 hours a day for that week, Carter and Davison shoved as much skin and scuba diving practice and theory at the men as they could absorb, at the end of which they were ready to let experience make experts of them in this field—and experts they have since become.

To our knowledge, this was the first State in the Nation to officially adopt a

statewide program of this sort, replete with a formal schedule of training and with definite responsibilities as a part of their regular police duties. At that time there were varying degrees of skepticism by some departmental heads and the program was considered as experimental, as well it might be—it is now a permanent part of the Michigan State Police.

Michigan has 3121 miles of Great Lakes coast line practically surrounding the State, in addition to 11,000 inland lakes comprising 39,698 square miles of water area—truly a water wonderland, but the water safety problem had been steadily increasing. With Michigan residents and the thousands of out-state vacationists making an ever-increasing use of these water facilities, the result had been that during the peak of the summer vacation season, there are instances where more persons are drowned in water accidents on a weekend than are killed in traffic accidents on the streets and highways. A full report of the establishment and training of this first Michigan State Police Diving Squad, as well as some of their initial accomplishments, was contained in the October, 1957, issue of "Skin Diver Magazine."

Within a week following completion of their training came an opportunity to test the value of the squad, when on August 22, 1957 the automobile of a young man and his companion was found on the shore of Walled Lake in Oakland County, near Pontiac. They had been absent from home since the day before, their wallets and clothing were in the car, so it was presumed that they had been swimming and were

drowned. Two State Police divers from the First District recovered their bodies from 15 feet of water 100 yards from shore after 20 minutes of searching.

Just four days later, at Three Lakes in Ingham County near Lansing, two fishermen upset their boat and in attempting to swim to shore, became entangled in weeds and were drowned. The density of weeds in the lake made it impossible to use grappling irons or dragging hooks, therefore, the only practicable recovery method was by diving. State Police divers recovered both bodies from dense weed growth in 25 feet of water, just two examples of UW police work.

All things considered, for their 1957 operation of five months, the new detail established a fine score and the permanency of their operation as a special detail of the Michigan State Police with seven bodies recovered and the recovery of nine missing articles of evidence needed to solve cases.

During April, 1958 the Diving Detail was expanded to 32 men when Trooper Carter and Don Davison trained 16 more men who were selected and assigned to the operation. An instance of a typical duty assignment was on October 19, 1958 when two divers from the Sixth Police District were asked to attempt recovery of a revolver and bullets from the White River in Newaygo County. The weapon had been used by a subject to kill his wife and wound his brother-in-law. The articles were located by the divers in five feet of water after 20 minutes of searching.

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ance of the underwater troopers, with 11 bodies and 8 articles of evidence recovered. 1958 also saw the need recognized for compilation of statistics to determine exactly where, when, and why such an alarming water accident rate was occurring, so from July through December, 1958 accident reports were submitted to the Michigan State Police by sheriff departments; township police, municipal police, and the State Health Department. These official reports, although not complete, indicated 257 water accidents during the six month period, July through December, 1958. These included 147 fatal accidents with 193 persons drowned or killed, 62 accidents injuring 89 persons, and 47 accidents resulting only in property damage.

The year of 1959 has shown an increase in water accidents, possibly due to increased efficiency in obtaining reports, and Michigan has determined to exert an all-out effort to curtail them. In June of 1959, Sergeant (now Lieutenant) Jack Foster, commanding the Police Training Bureau, was assigned an additional 24 men to induct as Water Safety Specialists, raising the total on the diving squad to 56 men. They were placed under the direction of capable Corporal Wilson Agar, as Trooper Carter is now the Governor's Aide, and Don Davison was privileged to assist with the skin and scuba diving portion of the training program. A rigorous training program it is, so that these men can go forth to any and all types of assignments with as good a chance for survival as well as successful fulfillment as it is humanly possible to provide them.

Not all of their added duties are in body recovery—many are in search of evidence needed in the solving of crimes. On Saturday, July 25, 1959, a request was made for the State Police divers to attempt recovery of an outboard motor from the St. Clair River

where it had been thrown after a larceny. This search started at 10:00 a.m. and within an hour, the motor was recovered from 50 feet of water. As the divers came out of the water, they were asked to locate a 26 foot cabin cruiser which had sunk several days previously in the river. They drove to the location, laid out a search pattern, and the first diver down landed on top of the boat. Just as they surfaced from this mission, a report was received that a 13 year old boy had just drowned in a canal about five miles away, so they drove to the scene. The canal was 75 feet wide and had been freshly dredged making the water very muddy and visibility zero, but within an hour of searching by feel, they recovered the body.

From January 1 through October 28, 1959, the official Michigan State Police file reports 418 water accidents, including drownings. Of these 418 accidents,

243 were Fatal accidents, 122 were Personal Injury accidents, and 53 were Property Damage Only accidents. In the 418 Water accidents, 283 persons were drowned and 177 injured.

Statistics to create a something less than pleasant picture, but certainly the facts. We all agree that Michigan, and other states if their facts were known, need the Water Safety Specialists. From the humble start with 16 men, Michigan now has 56 highly trained men devoted to the cause of greater safety in water sports. Those men are all Senior Life Savers at the moment. This winter they will be called in to headquarters for further training and to become Water Safety Instructors. Following this extensive training schedule, they will be assigned to classroom work to qualify as public speakers, so that in the spring of 1960 they can speak before high school auditorium periods, luncheon groups, and where ever they can be so utilized—their subject—WATER SAFETY.

Perhaps if they do that job as efficiently as they have served in others, they will not need to recover as many as the 17 bodies they have brought in through the 28th of October in 1959 and can confine their underwater activities to the recovery of more than this year's crop of 11 articles of evidence in crime cases disposed of in water by foolhardy criminals. They will go forth to sell the public of Michigan on the need to use good equipment in their water sport activities, get complete training in the use of that equipment, use sound judgement at all times, and otherwise to try to keep them from becoming a statistic on their State's Water Accident Report Forms.



Five of the diving Troopers prepare to start a search pattern for evidence needed in a current court case. —Official Photograph Michigan State Police.



Research and testing of the various products and rubber suits is also a part of the duties of the underwater trooper. Here four suits are being tested to determine the best type for their underwater missions.

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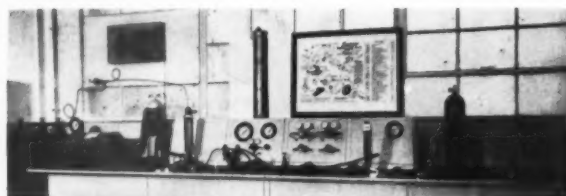
orm-



Sportsways extensive underwater equipment manufacturing facilities include several air-conditioned, dust-free inspection, testing and assembly areas such as shown above.



Richard M. Kline, seated at desk, and members of his research team, make the final check of their products for 1960. Sportsways now features a complete line of underwater equipment.



A portion of the development and testing laboratory at the new location.



Paul McComack, noted scuba diver and assembly foreman for Sportsways, makes the final high pressure check on the SJ constant reserve valve.

Celebrates Second Anniversary . . .

Sportsways Enlarges, Develops Complete Line

**Survey states that
sport of skin
diving has reached
point of sophistication**

Richard M. Kline, President of Sportsways announces that the production and development program begun at Sportsways previous location has necessitated engineering and production facilities undreamed of when he first organized his new company, Sportsways. Sportsways new location at 7701 East Compton Boulevard, Paramount, California, is a plant of 150,000 square feet on 9½ acres of land, leaving ample room for expansion.

A survey of the entire underwater equipment industry has convinced Kline, who was one of the first in the United States to manufacture fins, masks and other underwater equipment, that the sport of skin diving has now reached a point of sophistication, which would give his company a tremendous opportunity by meeting the urgent, advanced needs of this fast growing sport in the world. An analysis of their products after almost two years of creative work with its entire organization augurs well for the future of the underwater equipment field, beginning with March 1st 1960, the second anniversary of Sportsways.

Consumer demands as determined by a survey of the thousands of underwater clubs throughout the United States and foremost authorities in the field, was part of the survey which resulted in the radical departure from the antiquated equipment now in existence. The result is Sportsways all new line which has received the plaudits of the entire industry.

Sportsways new plant incorporates the most modern, scientific manufacturing facilities in the underwater equipment field. Here Sportsways has its own Laboratory, complete with high pressure chambers, flowmeters, manometers, testing equipment and a pool, all completely equipped to insure that every Sportsways product meets the most rigid standards of quality, safety and performance. >

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Local planning
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FIRST ANNUAL SOCIETY CONVENTION

. . . is underway

By DAVE BRUCE

Houston Underwater Club

IF THE initial meeting of Houston area diving clubs to discuss the First Convention of the Underwater Society of America is any indication of things to come—then look out for one tremendous convention!

George Youmans, newly elected President of the Southwest Council of Skin Diving Clubs and co-chairman of the Society Convention Committee stated: "We plan to make the first one a real pace-setter and give future conventions something big to shoot for."

Site of the first meeting, held on December 2, was the famous Ye Old College Inn. Its proprietor, Ernest Coker—an avid diver and a member of the Houston Underwater Club—hosted

the group to a cocktail-buffet before the business meeting. Wide publicity in the newspapers and on radio, plus a special TV-program on which George Youmans and Joyce Sims appeared, contributed to the largest turnout of the year.

Over 150 representatives from the Houston Underwater Club, Alameda Divers Association, Hunters Creek Underwater Club, Brazosport Underwater Club (Freeport), Ellington Skin Divers Club, Bajos Divers Club (New Orleans), and Dixie Divers Club (New Orleans) enthusiastically endorsed the

report of Lynn Montjoy of the Shamrock Hilton Hotel, who presented Houston's successful bid at the Chicago meeting of the society last September. The Shamrock will be headquarters for the August 20-21 Underwater Society of America Convention.

A preliminary warm-up for those able to take a full week off will be the three-day Grand Isle Scuba Diving Tournament off Grand Isle, Louisiana, immediately preceding the convention. It is hoped that many divers will take in the tournament before going on to the convention. Tournament President Joseph D. Albeanese, Jr. showed an excellent film with superb closeups of spearfishing for giant jewfish and swift barracuda.

Other highlights of the meeting, besides the lively discussion of the convention, were a short talk on Gulf Coast spearfishing laws by O. Frank Etheridge, Regional Coordinator of the Texas Fish and Game Commission, and a color movie taken by Bill Flagg of the Dallas Divers, Inc., in waters off Vera Cruz, Mexico.

Youmans stated that as definite details on the convention developed, they would be promptly reported in Skin Diver Magazine.



Ingemar Johansson, heavyweight boxing champion of the world, and Birgit Lundgren, who will one-day become Mrs. Johansson, readying for one of their favorite sports . . . skin diving. Johansson, who hasn't been champion for a year yet, recently won the Associated Press "Athlete of the Year" for 1959 Award. This is the second time in the history of the AP Award that it has been won by a boxer.—Photograph by Dennis Osterlund.



Officials of Gulf Coast Area at the December 2 meeting (l-r) are George Youmans, president of Southwest Council and president of the Houston Underwater Club; Sgt. John Jones, president of Ellington Skin Divers; Richard Doehring, president of Hunters Creek UW Club; Jay Albeanese, vice-president of Southwest (Louisiana Gulf Coast), president of the Grand Isle Scuba Diving Tournament and member of the Bajos; Roland Reviere, president of the Dixie Divers; Harry Paine, secretary-treasurer of the Houston Underwater Club; Mack Blaker, vice-president of Southwest (Texas Gulf Coast) and president of Alameda Divers Assoc.; Joyce Sims, recording secretary of Southwest and Jack Rudder, president of the Brazosport Underwater Club.

A FULLY RECOGNIZED SPORT . . .

G. D. V. TELLS OF THE TREMENDOUS FUTURE OF SKIN DIVING



Gustav Dalla Valle

We heard rumors about a big expansion program in the Skin Diving and Scuba Division of Healthways; so we called on Gustav Dalla Valle to learn what it was all about.

We found Gustav, for once, in his office, surrounded by samples, blueprints and an intriguing variety of experimental models and prototypes, which he assured us will evolve into Healthways' new line of diving products.

What is this new organization within Healthways that we have heard about, Gustav?

DURING the last decade the sport of skin diving has grown steadily. Today it is a fully recognized sport throughout the world. Now that we have gained this recognition, there is a tremendous future ahead, particularly in the development of new fields. New fields, of course, require new and specialized products. We must develop equipment that will enable man to communicate and travel underwater, to stay longer periods of time and to go to greater depths. It is a fascinating

challenge and I want to be a part of the race to accomplish these goals. So I accepted Healthways offer and became Director of their Skin Diving and Scuba Division.

First I organized a Research and Development Department. David Denis, Mechanical Engineer, University of Florida graduate and former member of the Research Department of Standard Oil of New Jersey, has been placed in charge of all engineering developments in new products and of manufacturing and production control. Richard Anderson, the well-known Santa Monica diving equipment technician has put his ten years experience in the scuba field into the development and testing of all Healthways equipment concerned with self-contained underwater breathing apparatus. I am delighted that we were able to get two such excellently qualified men to serve as a nucleus for this department.

How are Cressi of Italy and Peche-Sport of France concerned in your new organization?

We are working in very close cooperation with both of these companies. Mr. Luigi Ferraro, the inventor of the Rondine Fin and head of Research Department of the Cressi Company, is particularly concerned with new developments in masks, fins and guns. Mr. Georges Beuchet of Peche-Sport, inventor of the Arbalette and of the Compensator and Panoramique masks, is also primarily concerned with equipment for spearfishing.

What projects are you working on now?

Our most important project right now is the new two-stage regulators designed by Dick Anderson, which will be

called the "Scubair." We think this unit meets all the requirements of scuba diving. It has a minimum of moving parts, one high-test nylon and neoprene hose, and the protruding button that can lead to an involuntary loss of air has been eliminated. In addition, the air exhaust is channeled so as to give unrestricted exhaling and to prevent air bubbles from obstructing the diver's vision. We are very proud of this new unit.

Here at Healthways we have also developed a new harness from an original design by Dick Anderson. Called the "Scubapak," it combines safety, comfort and utility. It is easy to carry because of two comfortable handles.

Both these new pieces of equipment are now in production.

What about equipment you have on the planning board, Gus? What can we expect in the future?

For the immediate future we have set out to solve three problems: comfortable underwater transportation,



David Denis



Dick Anderson

have found the answer. I have always felt that underwater transportation should be easy, effortless and comfortable. You should be able to move along underwater as easily as you drive your car. I'm sure you remember the "Seahorse I" in which we made the well-publicized trip to Catalina. After four years of further testing, study and research, I am proud to announce the "Seahorse II," manufactured by Cosmos of Livorno, Italy. This new underwater vehicle is 18 feet long, seats two, is made of fibreglass and has electrical propulsion. We'll show the "Seahorse II" for the first time in America at the NSGA Chicago Show.

We are now in process of developing a wireless underwater communications system. I am sure you can see the advantage of such a system over a device that requires wires.

Our third goal is both important and difficult. It will take more time. You know, of course, that going deeper and staying longer is not a technical problem but a physiological one. But it is a problem that eventually will be solved and we are working with experts in a number of fields to bring about an early solution.

the Cressi Rondine is the ultimate in propulsion. The only possible improvement is the new type Super Rondine Fin which will also be unveiled in Chicago.

After many years of experimentation with all types of masks, I still find that the Cressi "Pinocchio" is the most efficient and comfortable mask for deep diving. The Pinocchio, of course, is an extremely difficult mask to manufacture. The new Model 1960 Pinocchio has the feather edge seal, which makes this mask absolutely leakproof. I feel very sure that once the divers of America have had a chance to substantiate the excellent features of this mask it will become the most popular on the market, as it is now in Europe.

Although I am satisfied with our current line of guns, I feel that no product is ever finished and we will continue to add improvements every year. This year, for instance, we are adding the "Doublette," a gun with two spears. As you know, there have been attempts made in the past to market a gun that allows the diver a second shot without having to reload. Unfortunately, none of these attempts

terial spring. This gun has been thoroughly tested both here and in Europe and has been a success.

All of these we consider major steps forward. In addition, we have a long list of brand new accessories. Let me tell you about one item we feel is very important, the "Fixe Palm." Invented by George Beuchat of Peche-Sport, the Fixe Palm attaches over any closed heel fin to anchor it securely in place even in the most turbulent waters. I think you'll agree that there is still great room for design of new and improved products for the skin diver.

What do you think of the 1960 market?

The company that brings out good equipment and well tested products at the right price will lead the field. This is only the beginning. The future of diving can be compared only with the immensity of the underwater world. Here at Healthways, it is our firm intention to grow as diving grows. As a pioneer diver who likes his fellow divers, I assure you that all items offered by Healthways will be the finest, most advanced, and most thoroughly tested equipment in existence.



Cameraman Victor de Sanctis, Torino, Italy, catches fellow diver in net shot in the Adriatic Sea.

Instructor's Corner

By NEAL HESS

Underwater Instructor
Certified by Los Angeles County
Training Director Boston YMCA Sea Rovers



This month I list the names of instructors who have sent satisfactory skin and scuba class outlines to Skin Diver Magazine. Of the total number of outlines received, I felt about fifty per cent were acceptable and the remainder were a little weak. I have communicated with each instructor who has written in and have given my comments as to the effectiveness of his course. Those that I felt were substandard have not been listed here. However, if they are brought up to national standards, they will be listed in the July issue.

Naturally I am treading on thin ice for an instructor can only be evaluated by taking the course offered by that instructor. On the other hand in the interest of national safety in skin and scuba diving a beginning must be made somewhere in communicating to the diving public those places where instruction may be obtained. This is that beginning.

I hope to make this listing a regular feature of the February and July issues of Skin Diver Magazine. Any comments from students and instructors will be appreciated in producing a list of the qualified instructors in North America. In order to be relisted an instructor must write to Instructor's Corner, c/o SDM, stating he is continuing to instruct and the improvements he has made in his course.

Instructors certified by Broward County, Florida, Red Cross:

John C. Jones, Jr.
216 S.E. 8th Ave.
Fort Lauderdale
Charles Hayslip
1404 N.W. 7th Ave.
Fort Lauderdale
Eddie Malinowski
631 S.W. 30th Terrace
Fort Lauderdale
John E. Murphy
Red Cross
West Palm Beach
Arthur Crease
1224 N.E. 24th St.
Fort Lauderdale
Robert Johnston
813 N.E. 3rd St.
Fort Lauderdale

Charles L. Crowther
1416 N. Andrews Ave.
Fort Lauderdale
Andrew M. Torony
3420 N.W. 6th St.
Fort Lauderdale
Earnie Harrell
545 N.E. 6th St.
Fort Lauderdale
Al Honaker
3016 Alhambra St.
Fort Lauderdale
Howard Wheale
1224 N.E. 24th St.
Fort Lauderdale
Tom J. Sterna
310 S.W. 2nd Ave.
Dania, Florida

Instructors certified by Atlantic Skin Diving Council:

C. K. Sherrill
4104 33rd St., South
Arlington 6, Virginia
Dan Dunfee
1127 Repton Randolph Dr.
Falls Church, Virginia

Jim Slater
3710 Norwood Dr.
Alexandria, Virginia

Instructors certified by Empire State Council and New York YMCA:

Bud Keithline
McBurney YMCA
New York, N.Y.

Instructors certified by Los Angeles County Department of Park and Recreation:

Vince Van Detta
803 Grandview Ave.
Covina, California
Roger Hess
26302 Senator Ave.
Harbor City, California

Al Tillman
834 W. Olympic Blvd.
Los Angeles, California
Neal Hess
210 Alta Vista
Los Altos, California

Instructors who have sent in acceptable course outlines to Instructor's Corner:

Don De Santos
West Roxbury YMCA
West Roxbury, Mass.
Al Mueller
Granite City YMCA
20th & Edison
Granite City, Illinois
John C. Johnsrud
Route 1W, Box 400
Great Falls, Montana
Donald E. Arnest
4061st F. M. Squadron
Box 445
Malmstrom AFB, Mont.
Rick Sanchez
2624 N. 48th Terrace
Kansas City, Kansas
Robert A. Tamin
6904 Hunter Ave.
St. Louis 20, Missouri

Harry McCabe
10830 S.W. 52d Dr.
Miami 55, Florida
Bernard E. Empleton
YMCA Central Branch
1736 "G" St. N.W.
Washington 6, D.C.
Joe Kelly
234 East 5th Ave.
Plainfield, New Jersey
Robert Fenton
28 Lakeview Terrace
Oakland, New Jersey
George A. Pope
Headquarters Company
Special Troops
Fort Monmouth, N. J.
Leroy Herriger
R.D. 7, Box 88
New Castle, Pa.

Phillip Bayouth
2517 N.W. 10th St.
Oklahoma City, Okla.
Donald J. Yanda
1105 15th St.
Copperas Cove, Texas
Donald Guthrie
1521 E. 12th St.
Tucson, Arizona
John T. Miller
7728 Lakeridge Dr.
Seattle 88, Washington
Edward Pallamouner
Route One, Box 56
Camas, Washington
Jackson Fraser
2159 Dellesta Dr.
Bellingham, Wash.
George M. Del Secco
1301 Guerrero St.
San Francisco 10, Calif.
Charles Hall
4553 East Inyo
Fresno 2, California
Milton L. Goetz
9198 Laurel Ave.
Fontana, California
Bob Retherford
4233 West Coast Hwy.
Newport Beach, Calif.
Fritz Hertlein
Ala Wai Yacht Harbor
1651 Ala Moana Blvd.
Honolulu 15, Hawaii
Carl Helwig
South Sea Searchers
c/o Special Services
Officer, APO 334
San Francisco, Calif.
V. Viksten
33 Howland Ave.
Toronto 4, Ontario
Canada
Elfege Ruiz
Provincia #921
Col. del Valle
Mexico 12, D.F., Mexico

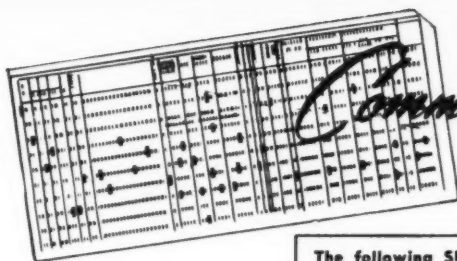
Charles Grogan
19 Twig Lane
Levittown, Pa.
Jerry Dzindzeleta
607 Sixth St.
Racine, Wisconsin
Bill Hitchcock
West 140 North
7905 Lilly Road
Menomones Falls, Wis.
Jacque E. Stiles
1305 E. Superior St.
Duluth, Minnesota
James F. Keeney
23462 Irving
Taylor, Michigan
Arthur F. Bennett
1914 Bartley Rd.
Dayton 14, Ohio
Wayne Pilney
3006 Park Dr.
Parma 34, Ohio
Steve Tjaarda
Aquatic Director
West Side YMCA
New York, N.Y.
Daniel Grossman
44 West 175th St.
Bronx 53, New York
D. Howard Bliss
Chataqua, Box #91
Jamestown, New York
Milton C. Shares
190 Glenbrook Rd.
Rochester 16, N.Y.
Paul J. Tzimoulis
14 Hemingway Ave.
East Haven, Conn.
James Cahill
42 Water Street
Beverly, Massachusetts
Frank Seall
Huntington Avenue
YMCA
Boston, Massachusetts
Paul Connolly
20 Beacon St.
Dedham, Massachusetts

Instructors, take note: Mr. Hess is compiling a complete list of instructors throughout the country and requests that you send him your name, address and an outline of your skin and/or scuba instructor course. Mr. Neal Hess, c/o Skin Diver Magazine, P.O. Box 111, Lynwood, Calif.



This curious 2½ inch long creature is a true fish. Its scientific name is "Maltheopsis lutea". The first was taken in a trawl about 70 years ago in deep water off the Andaman Islands in the Indian Ocean—then it was discovered off Japan, and later near the Hawaiian Islands in the Pacific, all in fairly deep water, on the bottom. It has now been found in 40 fathoms off Durban, South Africa. This is an amazing range for so small and feeble a fish. It is a type of "Angler" fish, with a short movable "lure" under the bony nose. Apparently it crawls about on the bottom on its leg-like fins. Note the second pair under the body (A).—from Field & Tide.

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Commercial Business Service, Inc.

TABULATING - CALCULATING - DIRECT MAIL SERVICE

The following **SURVEY REPORT** is based on the **SKIN DIVER** Magazine reader survey printed in the June 1959 issue. The answers were obtained by IBM tabulation . . . results should give an insight into the type of person that goes underwater, age group, money spent, colors preferred, family participation, etc.

Free Recreation Time—43.7% devoted to skin diving.

Skin Diving Clubs—46.5% are members.

Transportation equipment owned:

Car	79.5%	Trailer	15.5%
Boat	34.1%	Airplane	1.9%

Average miles traveled in pursuit of skin diving during past 12 months:

Car—1,502, Boat—372, Trailer—1,732, Airplane—2,651

Age of Skin Divers—Average, 26.2 years.

9 to 21.....	30.6%	36 to 50.....	13.6%
21 to 35.....	54.3%	51 to 77.....	1.5%

Source of skin diving equipment purchased:

Specialty diving shop	44.7%	Marine supply.....	6.1%
Sporting goods store	24.3%	Department Store..	2.0%
Mail order	14.4%	Hardware store	2.3%
		Other	6.2%

Skin diving equipment owned:

Scuba lung.....	81.8%	Underwater camera	30.6%
Exposure suit.....	80.2%		
Spear gun	77.4%		

Health improvement:

98.4% stated that their health has been improved since taking up skin diving.

Marital status: 53.3% married.

Family Participation: 50%

Readers of Skin Diver Magazine:

An average of 4 to 5 individuals read a single copy of Skin Diver Magazine each month.

Colors preferred in underwater equipment:

Yellow	40.4%	Blue	9.7%
Black	22.2%	No preference	27.7%

Individual annual expenditure for skin diving equipment, travel, etc.:

Average—\$340.00.

* Note: It appeared that many of those reporting did not include travel expenses.

. . . a few choice remarks taken from the Survey regarding health, interest in skin diving, etc.

Age 56—Connecticut

"Have given up yacht racing in favor of skin diving . . . my wife says I'm easier to live with when I get enough diving."

Age 44—Indianapolis, Ind.

"I am glad that I have had a chance to see the underwater world."

Age 36—Atlanta, Ga.

"Most challenging, engrossing, rewarding, interesting, beautiful, educational, healthful sport going."

Age 16—Syracuse, N.Y.

"I enjoy the sport of swimming much more since I started diving."

Age 19—Chicago, Ill.

"Besides being adventurous . . . skin diving is very tension easing."

Age 21—Des Plaines, Ill.

"Skin Diving in my opinion is the number one sport year-round. Appreciate having your magazine to support us."

Age 31—Seattle, Wash.

"I am a wife and mother of 4 children . . . no other sport has ever held a family closer together."

Age 28—Boston, Mass.

"Asthma has seemed to disappear after taking up skin diving."

Age 31—Perry, N.Y.

"Being a science teacher I find that many things learned from skin diving and scuba diving can be applied to the classroom."

Age 16—Chicago, Ill.

"Lost 15 pounds of fat, can hold my breath longer, leg muscles have developed . . . am much stronger."

Age 42—San Francisco, Calif.

"My Doctor says . . . good activity for a healthy middle aged person so long as I stop when fatigue sets in."

Age 18—Wenatchee, Wash.

"Used to have asthma. Since skin diving, breath control and overall breathing has improved."

Age 30—San Diego, Calif.

"Am Ex-UDT . . . diving has kept me fit since 1942—so my Doc says."

Age 26—Milford, Conn.

"Good exercise, keeps me physically and mentally alert."

Age 42—Plainfield, N.Y.

"Yours is the only magazine I read cover to cover including the ads."

Age 30—New York, N.Y.

"A large part of my expenditures go to my 32-ft. boat for special equipment for wreck hunting."

Age 31—San Antonio, Texas

"A youthful hobby—prevents hardening of the brain."

Age 32—Quincy, Mass.

"Being a hard hat diver (USN Salvage) for 5 years . . . scuba has it all the way for freedom."

Age 25—Detroit, Mich.

"Have tried all types of sports, think the most of diving."

Age 39—St. Paul, Minn.

"Nothing finer for all of the family for health and recreation . . . all 7 of us agree."

Age 27—Upper Darby, Pa.

"Great Sport, should triple in popularity."

Age 20—Tucson, Arizona

"It's a disease, but a pleasant one."

QUESTION & ANSWER

COLUMN by TUSSEY

Direct all questions to this column in care of Q&A Column, Skin Diver Magazine, Lynwood, Calif.

What immediate treatment can you recommend for a diver who has been stung by a sea wasp or Portuguese man-of-war?

Have someone else seek medical assistance; proceed rapidly with these steps. Remove tentacles and as much stinging fluid as possible, using a cloth or a handful of sand, try to avoid spreading the material. Apply weak ammonia or saturated sodium bicarbonate solution if available; otherwise rub area gently with wet sand. Then wash with fresh water, and see physician.

I have just recently learned to skin dive and because of the lack of air stations in my area, would like to purchase an oxygen rebreather. What kind do you recommend?

It is certainly easy to appreciate your

problem, lack of air stations, however; I strongly recommend that you leave the oxygen rebreathers to the professional divers as they are indeed a hazard.

Recently in one of my scuba classes a student asked how close a diver could be to an underwater explosion without being harmed?

The factors which determine the degree of injury are the proximity and size of the explosion. The total force exerted by a blast wave on a diver can be calculated from a formula which involves both P, force in pounds per square inch, equal W, weight of explosive in pounds, cube root of, over D, distance of charge from diver. Five hundred pounds per square inch is sufficient to cause injury to lungs and intestinal tract.

On our last ocean dive of about eighty feet my diving companion complained of tremendous pains in the abdomen. Can you tell me what could have caused this?

Forming of gas in the gastrointestinal tract can be very painful, especially during ascent. This condition usually is caused by swallowing air, while under pressure, eating foods that are likely to produce intestinal gas, or chewing gum during a dive.

In several articles I have read on shark fighting they say to stay below. Wouldn't a snorkeler be at a disadvantage because of his limited air supply, and what should he do?

Anyone would be at a disadvantage to a shark that has definite ideas on rendering you apart. But there are various methods for scaring away an inquisitive shark, such as shouting, splashing, or banging rocks together. Remember two people together are in a better position to ward off a shark than a lone swimmer, therefore; never dive alone. ➤



DINING FOR DIVERS

By Allan Petri

The *Crago franciscorum* is not the usual prey of the skin diver but it (shrimp—to those who haven't been versed in the language of ichthyology) is actually a miniature lobster. Many people have asked, what is the difference between a shrimp and a prawn. Generally speaking, the only difference is one of size. The large Baja California shrimp is what most of us think of as a prawn.

In buying shrimp keep in mind that they are packed on a count basis. The best for eating enjoyment is the 15 to 20 per pound count. For appetizers and dips, the 31 to 42 per count is usually used. Any below this count are, generally speaking, too small and tend to break up when being shelled. The one thing to remember when buying shrimp is that they are extremely perishable and should be eaten as soon as possible after being purchased.

As in the case of lobster, there is an almost infinite number of ways of cooking shrimp. One of the simplest, and to my mind one of the best, is the Italian dish called Scampi. For this you will need:

- 2 pounds of 15 to 20 count shrimp
- 1/3 cup of olive oil
- 3 chopped cloves of garlic
- 1/3 cup of chopped fresh parsley

Wash and dry the shrimp thoroughly and then sauté them in the olive oil over a hot flame for about five minutes. Shake the pan (an iron skillet is best) frequently to keep them from sticking to the bottom. Now remove the shrimp from the oil to a hot serving dish. To the oil remaining add the garlic and parsley. Shake the pan over the hot flame for a few minutes and then pour the sauce over the shrimp.

This can be served as the main dish along with rice. One way of preparing the rice for Scampi that you may like is Rice Francaise. You will need:

- 1 cup of well washed rice
- 3 cups of chicken stock (bouillon will do!)
- 1 bay leaf
- 1 clove of garlic—peeled
- 3 egg yolks
- 3 tablespoons of half and half

Cook the rice in the chicken stock with the bay leaf and garlic for about 20 minutes over a medium flame or until the rice is tender and there is no moisture left. Mix in the egg yolks and half and half. Pack the rice into a ring mold and press down tightly. Turn this on to a hot serving platter and serve the Scampi in the middle. You can garnish the rice with fresh parsley or sprinkle a little paprika around the ring of rice.

Try it and let us know how it comes out! ➤

TEN COMMANDMENTS FOR DIVERS

by JAMES E. ALBRECHT

- I. THOU SHALT never dive or swim alone, under any circumstances, lest the manner of thy death forever remain a mystery to the living!
- II. THOU SHALT develop a professional, precision, and business-like approach toward diving, both in thy buddy and in thyself, lest frivolity result in tragedy!
- III. THOU SHALT keep thy equipment in excellent condition, lest failure of a component render thee lifeless!
- IV. THOU SHALT always wear a reliable life preserver, lest sickness, cramps, fatigue or injury leave thee unable to cope with the necessity of keeping thy head above water!
- V. THOU SHALT not lose contact with thy buddy whilst in the water, lest help, when needed, fail to materialize!
- VI. THOU SHALT frequently check the progress, condition, and equipment function of thy buddy to insure that nothing is amiss!
- VII. THOU SHALT investigate thoroughly all waters and areas surrounding before diving, lest undiscovered hazards become thy undoing!
- VIII. THOU SHALT train thyself to be able to recognize and use appropriate hand signals, lest underwater activities turn into a grim charade!
- IX. THOU SHALT know the behavior and peculiarities of marine life, lest thee fall prey to the creatures of the deep!
- X. THOU SHALT approach the sport of diving, sound of body, sharp of mind, and keen of eye, and with the understanding that thou art out of thy element, or thy diving career will be a brief one!

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"Half and Half"...one of a group of photos that won the underwater photography contest of the Connecticut Council for Paul Tzimoulis. Argus C-3, wide angle lens, plexiglass housing made by Will Jacobs, Super Hypan film, f.5.6 at 1/50th of a second.

CONCH POISONING

from "Sea Secrets"

Question: Recently we had a raw conch salad for lunch. I selected the conch myself—large, very white and with lively muscle reaction. Yet, my three children, two maids and myself became very ill after eating the salad. The doctor prescribed Allen & Hanbury's (England) "Guanimycin" tablets, which gave us immediate relief from the cramps and pains. There may have been a Samba conch in the lot but I understood the Samba flesh is rather yellow. Or the conch may have been washed in harbor water, but tests have shown very little pollution there.—Col. F. A. Wanklyn, Nassau, Bahamas.

Answer: This is the first factual account received of poisoning from conch. Although we have heard that conch can be poisonous at times, we never believed it except in the case of the Samba. Lately, however, it has been learned that conch are herbivores and feed on very small filamentous algae. This makes it possible that they could eat blue-green algae, which Dr. Randall considers may be the possible source of fish poisoning in the tropics. Samba, easily distinguished by its nearly black skin, is presumed to be inedible, causing severe sickness when eaten.

FEARLESS SCHULZ'S SHARK-SHOOTING SAGA

By John Hames-Gipps

Editor of "Oceanic Scroll" USFA of South Australia

THE DAY was Easter Monday, sky was clear, the sea had slight swell breaking heavily at times. The visibility away from the rocks was about 40 feet, in close was turbulent and murky, with sand puffing up from the bottom.

We were rock-hopping on Saw Tooth rocks north of Sand Bar, George Schulz and Ron Frazer were in the water, I was warming up in the sun, keeping a keen eye on both of them, when Ron gave me the shark signal.

George had just speared a bream and reloaded his gun because of the long swim back to calm water to get out, when a shark approached within twenty feet of him in midwater 10 feet down. It started to circle and George loaded the second $\frac{3}{4}$ " rubber on his 5' 6 $\frac{3}{4}$ " spear. The bream was still dangling on George's line.

The shark swam in close again, this time on the bottom. George dived, and it swerved away, only to come straight back. This time George got within six feet and over it, placing a good shot at the back of the head and 1 $\frac{1}{2}$ " to the left of the backbone. The ratchet screamed and George took off like a surfboard on a shoot, a hundred feet away out to sea. The shark turned and doubled back, giving George the problem of slack line, he pulled it in by hand and the shark circled. Ron, who

stayed close to George, signalled me for help.

Swimming out as fast as I could without getting out of breath, I came across the shark twisting and turning and snapping at the spear, in frustrated attempts to shake off his attackers.

Even though the spear was in the top of his head, he had it bent around and in his mouth. If George had not kept a tight strain on the line he would have rolled himself up and bitten the 500 lb. nylon. His back presented a broad target, but realizing that a backbone shot was necessary, I dived and fired, with the spear not six inches from his back. Even then I missed the kill shot by about an inch, but was lucky enough to break a spur of bone off the spine. He shuddered visibly and quietened down considerably. I inflated my Mac-West and swam clear of him.

Ron then dived and his detachable head was knocked off by bumping my spear. A nasty moment followed for Ron, as the head looped around the spear, but he quickly freed it and dived again. In his endeavor to avoid our spears his shot went wide and too far forward, but it gave the shark a stunning blow, for as it hit the bone structure of its head, it pulled out.

In the meantime, George and I were

making some progress toward a gutter in the rocks. A large wave picked me up and stretched my cord dead tight, the shark got fouled in the shallow water and my cord broke. Ron by this time had his spear fast in a good position and took over where I left off. This gave me the chance to get out and take over from out of the water, taking George's gun and letting them both out of the water before bringing him up in the gutter.

The swell was a big help and as I hardly had any strain on the line we beached him with the aid of a line fisherman. He was a male 9' 1" Grey Nurse Shark with a girth of five feet.

Stomach contained two stingrays and a shovel nosed shark. When cleaning the jaws, we found the anal spine of a large bream fast in the jaw with a 4" barb of a stingray next to it.

George's shot penetrated 9" fired with two rubbers from six feet. My shot penetrated 14" from six inches.

Ron's second shot penetrated about six inches.

Contrary to my former belief a sharp knife split the gut from end to end in one stab and slash. It amazed me the ease with which the knife penetrated.

Summing up I would say our rubber guns, fitted with $\frac{3}{4}$ " rubbers, did a marvelous job and a good shot down through the head is the answer to these babies.

Somewhere along the line we lost the bream.

WASHINGTON DIVERS HOLD MARCH MEET

By Lewis, Sample

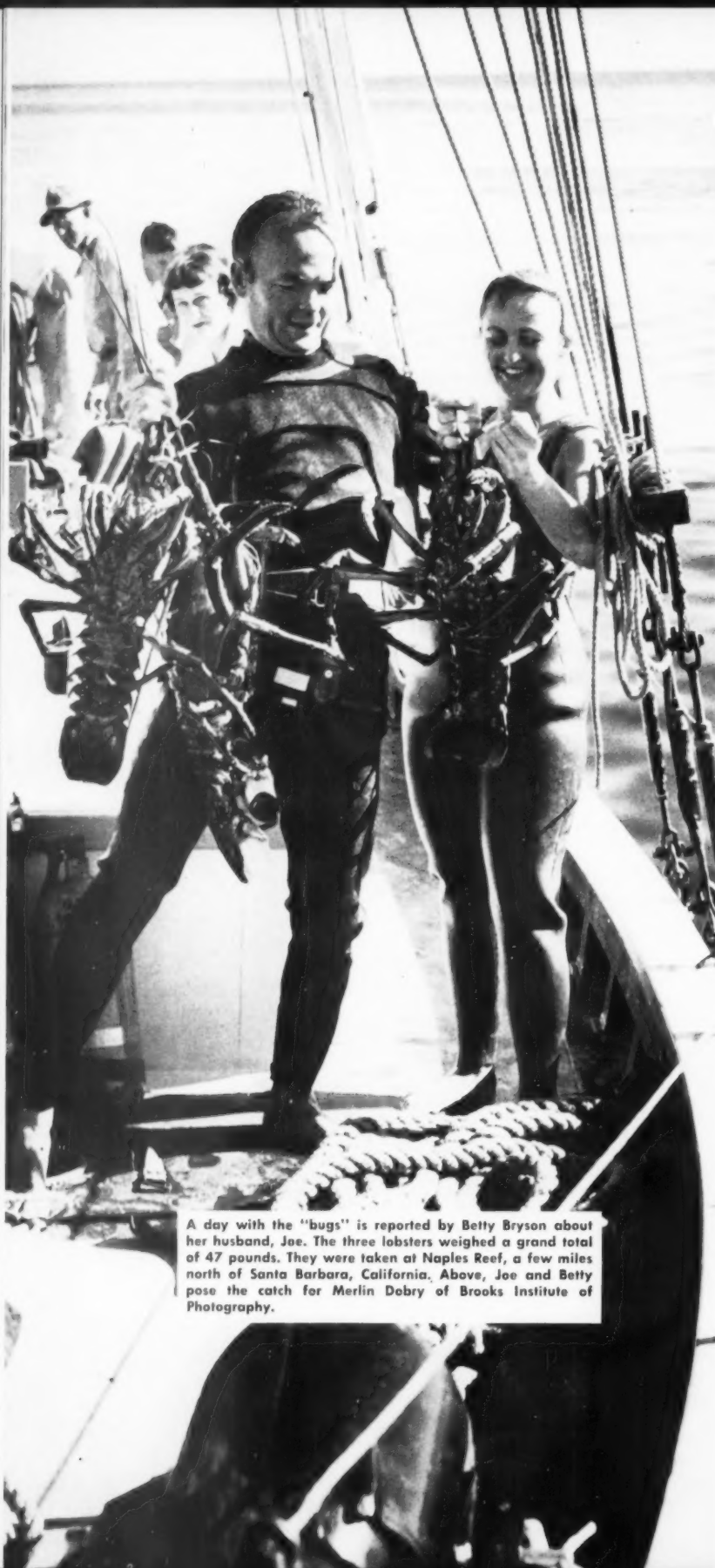
More than \$500 in prizes and trophies will be awarded to the winners in the International Skin Diving Meet scheduled for March 20, 1960, according to an announcement by the Port Angeles Nemgorf Divers. The annual meet will be held at Ediz Hook in Port Angeles and the diving area will be closed for one week prior to the meet by arrangement of the local skin divers.

The rules state that each team member may weigh in two fish and two or three men teams will be allowed. The three hour meet will start at 10:30 a.m. and hot coffee and chowder will be served to all divers and their families.

The Nemgorfs reported a highly successful meet on Ediz Hook last year with the biggest fish caught that day weighing 38 pounds and 2 ounces. It was a ling cod speared by Jim Blanchard of Seattle.

Eighty three divers participated and 550 people watched the fun. A total of 690 pounds of fish were weighed in. This averaged two edible fish per man (about eight pounds of fish) each.

Information on the coming March diving contest may be obtained by writing to the Nemgorf Divers, 834 East Front, Port Angeles, Washington.



A day with the "bugs" is reported by Betty Bryson about her husband, Joe. The three lobsters weighed a grand total of 47 pounds. They were taken at Naples Reef, a few miles north of Santa Barbara, California. Above, Joe and Betty pose the catch for Merlin Dobry of Brooks Institute of Photography.



Last year's first place winning Mudsharks team with Jim Blanchard holding the largest fish speared.



Wives of Nemgorf Divers who conducted the trophies and the staging area last year will again put in an appearance in March.

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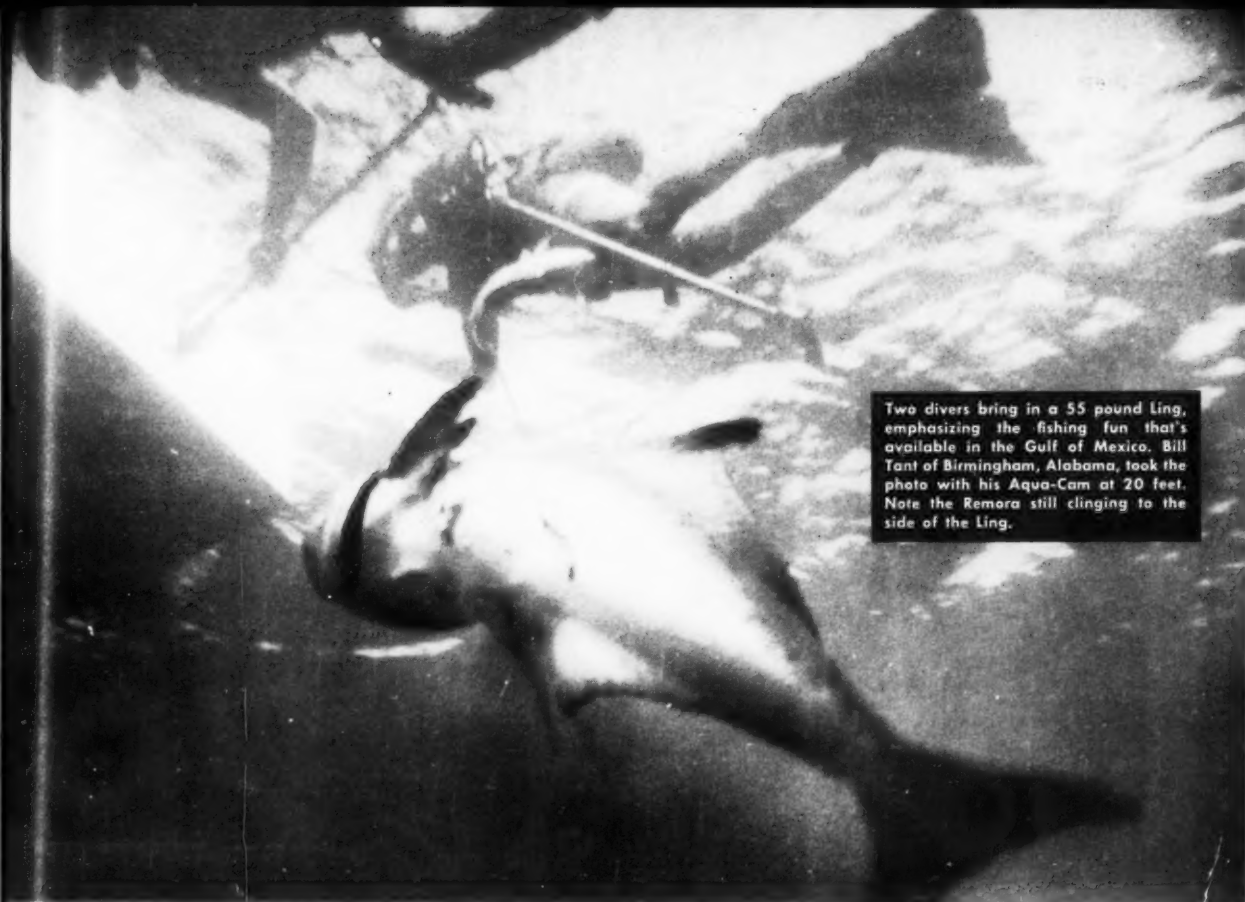
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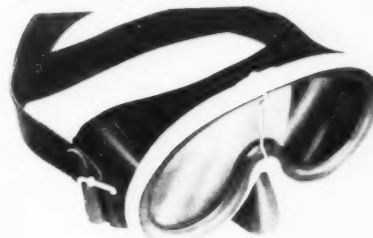
Two divers bring in a 55 pound Ling, emphasizing the fishing fun that's available in the Gulf of Mexico. Bill Tant of Birmingham, Alabama, took the photo with his Aqua-Cam at 20 feet. Note the Remora still clinging to the side of the Ling.

SPORTSWAYS introduces its new line of "BLUE MANTA" Fins imported from Tigullio in Italy. The design of this full foot pocket fin gives ample freedom to the foot because of the extra width through the ball of the foot and instep for divers wearing boots. The extra height and contour of the heel adds to the comfort. Maximum power thrust has been achieved because the law of Hydrodynamics has been scientifically applied for each foot size. This together with the rigid fin blade makes an unbeatable combination for both beginner and expert. "BLUE MANTA" is made of the finest compound rubber available and comes in 8 sizes to fit shoe sizes from 1 to 13, retailing from \$6.95 to \$11.95 per pair.

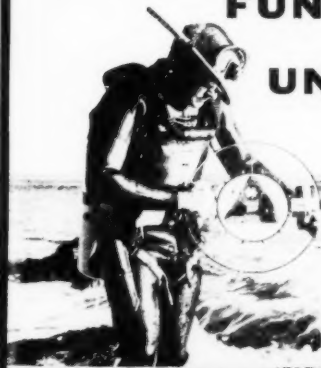


Underwater Bookshelf department of SDM, on Page 83, features the best of underwater reading and a few interesting maps also for the treasure hunter.

PINOCCHIO "MODEL 1960" PROFESSIONAL MASK—Featuring a minimum air displacement, the imported All New Pinocchio Mask offers greater diving depth. The exclusive design allows relief of underwater pressure on the ears. Newly created double seal feather edge makes this mask absolutely leakproof. Tempered Glass Safety Lens. Price \$5.95.



FUN AND PROFIT! salvage & treasure hunting UNDERWATER!



Locate sunken treasures, outboard motors and other salvageable items with GOLDAK's new, TRANSISTORIZED Underwater Metal Detector, model UD11.

Completely waterproof. Encapsulated circuit for accuracy, reliability and ruggedness. Simplified tuning. Lighted meter for easy reading. Flashlight batteries for low cost maintenance. Send for FREE descriptive literature today.

THE GOLDAK CO., INC.

1553-5 W. Glenoaks Blvd., Glendale 1, Calif.



"You mean this ain't the sink hole where the guys have been diving?"

Suddenly a powerful swell tore John from his grip. He went surging away in the current. He was picked up by a second swell and literally catapulted head over flippers towards the jagged rocks. He swam for the surface desperately. We who were watching from a distance spotted him and shouted to the sailor in the dinghy. The sailor threw him a line but in so doing lost control of the boat which went surf-boarding towards the rock on the crest of a breaker. The sailor fought desperately to pull the dinghy out of its perilous position. When at last he had succeeded, he tugged an "OK" signal on the cable but discovered there was no one at the other end. Robert had been lost.

Panic seized us. Frantically we searched the thrashing surfaces for Robert's telltale bubbles. At last one of the on-lookers spotted him fifty yards to the north in open waters. When the dinghy had rocketed up on the wave it had torn the cable from Robert's hands. He had simply swam north by his wrist compass to get out from under the breaker before coming up.

Florent Ramage and I were already dressed, so we decided to give it one more try. This time, however, we would use a circular pattern. This would confine our search near the calmer center of the cove and avoid the breakers near the shore. It was a foolish move.

We went down and attached our search line to a heavy buoy anchor. Then we swam around the anchor in outgoing concentric circles... or rather we tried to.

The moment we got to the weather side of our anchor, a swell shot us right over it and left us literally hanging horizontally from the thin line on the opposite side. This happened only twice before the line broke and we were being catapulted in towards the rocky shore. We felt what had happened and grabbed hold of bed rocks and clumps of algae to hang on. The water turned an opaque white as the swells broke just above our heads. Then suddenly there was darkness all about me. I felt the rush of water over my face and into my nose. I felt for my mask. Luckily, it was still on my head. A swell had caught it on the side and spun it around so that it now covered my left ear. Somehow I fumbled with it until it covered my eyes again. I pressed it against my face, and blew hard to clear the water out. When I could see again, Florent was there, firmly gripping the harness of my lung. We made for the surface, quick.

When we got back to the boat, Don Eduardo was on board.

"What did you find?" he inquired anxiously.

We shook our heads.

"Well, you aren't quitting, are you?"

We eyed him incredulously. None of us even tried to explain. Florent simply patted him sympathetically on the shoulder.

"Tomorrow," he promised. "Tomorrow we'll have better luck."

And we did. Overnight the wind died down. The low sun shone bright in the sky. The storm had left the water clean and clear of plankton. We arrived at the search area when the low tide brought a slack in the swells.

It was so calm that instead of going down in teams of two, we decided to go down one by one in order to increase our searching efficiency.

This time the boats loaded with the families of the lost crewmen crowded so close that we had to clear them out in order to maneuver.

Florent went down first. Holding on to the thin cable, the dinghy led him across the mouth of the cove.

Then both dinghy and boat moved twenty yards towards shore and the dinghy led him back. There was nothing.

While Florent was changing bottles, Robert went down and followed the same procedure closer in. Then it was Florent again as Robert changed bottles.

Since we usually limited ourselves to two dives per day, I got dressed to take Florent's place in the search.

But I never got a chance. Near the end of Robert's second dive, the sailor in the dinghy got a signal to throw a buoy over. Robert soon came spluttering to the surface.

"I found them!" he cried as the dinghy brought him near.

Although most of them were out of earshot, the families seemed to sense what had happened and crowded around our boat. We had to ignore the almost hysterical chatter of Don Eduardo in order to make our plans.

All the bodies were apparently pretty well localized. In order to profit by the good weather, we decided we would all go down at the same time. Florent, Robert and I would retrieve bodies while John Nathan looked for remains of the hull.

As the crew strapped the heavy air bottle on my back, I felt a strange reluctance to have anything to do with the dead crew. A feeling of nausea nibbled at my innards and I almost got sick anticipating what lay before me.

We checked each other's breathing gear and then followed each other



Contented that proper religious rites are now possible, women wheels body of dead husband to burial place.

down the buoyline which marked the spot. The visibility was unusually good for those waters and before we were half way down we could see them scattered over the bottom. In the midst of them, a huge octopus which had gorged itself to death on dead sardines washed back and forth in the ebb and flow of the current.

On first impression, it appeared like an underwater battlefield. Here were men who had not long ago been living, thinking beings just like myself. They still bore the same marked characteristics peculiar to the Gallician fishermen, the same strong, calloused hands, the same rugged features. They still wore the same clothes, the same rubber boots as those who walked along the docks in the port. Had it not been for the fact that their skins had turned a complete alabaster white, you might say that they had just laid down amidst the rocks, algae, and bits of debris to rest. Yet with all their resemblance to living men, you knew that they were nothing but so much weight, an empty box that had once housed a soul. You couldn't get rid of the idea that this was your own final destiny. It was an eerie revelation of just how temporary our trip to earth really is.

John Nathan began his search for the wreck while the rest of us signalled which section of the bottom we would cover. We each carried a coil of line with us. We passed the coil of line under a body, and looped it over in a simple overhand knot. Then we swam over to another and repeated the process. Each of us managed to get three bodies before we ran out of air and had to surface.

In the meantime, John had discovered the remains of the hull and could shed some light on the cause of the disaster. But now it was a race against darkness.

We changed bottles and went back down. A thorough search of the immediate area produced only two more bodies. The visibility was waning fast. Although twelve men remained unaccounted for, we had to call our search to an end. We tied the ends of our lines together and brought a free end up to the surface. The men from Moana pulled the bodies to the surface. As



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UNDERWATER SOCIETY OF AMERICA

JOHN J. McANIFF

Director of Publicity,
Underwater Society of America
P. O. Box 724, Station A
Champaign, Illinois

The latest word from President Carl Hauber on the Competitive Skin Diving situation indicates that the jurisdiction of the sport has been relinquished by the Amateur Athletic Union of the U. S. in accordance with the request of the Board of Governors of the Underwater Society of America. The action of the Board at their meeting in Chicago last September started the ball rolling and all the necessary steps to accomplish a smooth transition of the jurisdiction of the sport were undertaken immediately. At this moment we do not yet have a detailed report of the actions taken by the A.A.U. in its meeting at Miami in late December.

A letter received at National Headquarters of the Society recently points out quite vividly the tremendous interest in both the Society and the sport of skin diving in general. Written by Arthur W. Kownslar, Secretary-Treasurer of the Blue Fin Diving Club of Eniwetok Atoll in the Marshall Islands, the letter states that because of the change in the military situation in that area it has become necessary to disband the club. Having cared for all the affairs of the club and after settling all their accounts, there was a balance of twenty-five dollars. In a final act of true sportsmanship, the disbanding club voted unanimously to send this money on to the Underwater Society of America, to be used for the next world championship team from the United States. With this action, the Blue Fin Diving Club has the distinction of being the first official contributor of an unsolicited donation toward the sending of the 1960 national champions on to the world championships. Congratulations to this fine club. We are sorry to hear that they are disbanding and will hope that the many fine members of this club will quickly integrate into other clubs and lend their wisdom and knowledge

to others so that all may benefit.

Carl Hauber, our hard working President, reports that Miss M. E. Lillis, Secretary of the Midwest Diving Council, has been appointed to the position of Inter-Council Coordinator and in this capacity Miss Lillis will handle all inquiries and matters requiring individual council attention. As they are received, the inquiries will be reviewed and then forwarded for action to the individual council involved. Miss Lillis' level headedness and executive ability were a fine contribution to the September Board Meeting and will surely serve the Society well in her new capacity.

In the interest of the international nature of the Underwater Society of America it is important to point out that the Society discourages the use of the initials USA when referring to the organization. The reason is obvious; with membership in the Society extending beyond our national borders into Canada, Mexico and other countries it will serve the purposes of international relations better to avoid referring to the Society by its initials. The cooperation of all concerned will be sincerely appreciated.

C. K. (Rusty) Sherrill, popular Chairman of the Atlantic Skin Diving Council and Director of Membership for the Underwater Society of America is presently compiling an accurate roster of Councils, clubs and their membership number for the Society's files. New applications for membership in the Society are coming in in a steady stream and in order to keep the records straight it is necessary to have complete details on all councils and clubs. Rusty has requested that all new applications include the number of members in the club and that the application be sent to the Society Headquarters (address above) and directed to the attention of the Director of Membership.

each body was brought aboard a launch, the families would identify it with a long and mournful wail. When they were all up, the hysterics of those families whose men had not been found were even more heart-rending.

The weather worsened. A strong wind blew in more brutal swells from the southeast. It took four more days of hazardous searching in buffeting currents to find the rest of the bodies. Only then did we turn to the wreckage which pointed out the probable cause of the catastrophe.

The boat had been completely torn apart by the thrashing seas. After only ten days, nothing remained of it but a few ribs, the big diesel motor and the shaft which led to the crumpled propeller. Ironically, it lay just off the northeastern point of Saint Martin's

Island, whose name saint was shared by those Moanans who died there.

A length of fishing net was bound tightly around the shaft between the propeller and the skeleton of the hull. We think that a huge wave washed the net off the Ave del Mar's deck just as she entered the treacherous passage. The net became entangled in the propeller shaft and bound the motor until it stopped. This left the boat out of control, and it capsized in the ravenous swells.

There are lots of people who don't buy our theory. Plenty of people around Galicia are leading better lives now, because they think the Ave del Mar and her crew fell victim to Saint Martin's wrath for something they had done. They may be right.

No one, who could say for sure, is here to say. ➤

Interest in the activities of the Society is being displayed in many ways. The office of the Publicity Director is being flooded with requests by publishers and authors all over the country and most recently has received requests from one European and one South American firm to do stories on this "first-of-its-kind" organization anywhere in the world. Background information on the Society's origin is being supplied to those requesting same. Some of the members of the Board of Governors of the Society are writing stories on the new organization and helping to spread the word far and near that America and the Underwater Society of America ranks high in the Underwater World picture.

A policy has been established by the Society regarding this fine publicity relative to items written by members of the Board or members of clubs or councils of the Society. It is requested that any such articles be submitted to the Publicity Director of the Society for review prior to publication if the writer uses his official capacity in the Society as a part of the article. The reason for this is simply to assure that all facts relating to the Underwater Society of America are accurate according to the Society records. Anyone is free to write without said review provided that there is no inference that the writer is speaking in an official capacity for the Society. The office of the Publicity Director will cooperate in every way possible to provide full information on the activities and history of the Society.

Will Jacobs, the Society's Vice-President, has completed his report as chairman of an Audit Committee on the Convention held last February in Boston and this report, indicating an overall loss in the activities is now in the hands of the President. The sponsoring group for this event is making every effort to clear the deficit and another report is expected in the near future.

The matter of safety in diving is being delved into by the very able Mr. C. B. Davis, our Canadian colleague who has been appointed as Director of Safety of the Society. Mr. Davis will be happy to receive any and all comments and recommendations regarding this very important factor. Correspondence on matters pertaining to safety in diving should be sent to Society Headquarters, and directed to the Director of Safety.

A most recently received bit of news comes from our neighbors south of the border, where the Club de los Hombres Rana has indicated that a Mexican Council of Diving Clubs is underway. All Mexican Clubs interested in affiliation with this new Council are urged to write to: Club de los Hombres Rana, c/o Casa de los Hombres Rana, Av. Chapultepec, 441, Mexico 7, D.F. The Underwater Society of America welcomes this newest interest by our fellow divers south of the border. The truly continental atmosphere of our new Society is once more emphasized by the addition of this club and by the interest shown in the many other areas of the Americas.

The reader will find elsewhere in this issue of SDM current news on the progress of the Convention Committee in Houston. It is to be noted that Convention Committee Chairman Hal Lattimore has appointed as his Co-Chairman Mr. George A. Youmans, newly elected Southwest Council President.

The '60 Convention is already a favorite topic of conversation among divers, and indications are that it will exceed the fondest expectations. ➤

WATER MANIPULATORS

(Continued from Page 23)



Thorne and Gross

itself. Swimming, walking, working, breathing take on a new meaning underwater. There is weightlessness. There is fantasy, drama, and adventure.

Jim Thorne, a member of the famed Adventurer's Club and co-owner of an underwater photography group called Adventure Inc., arrived on the scene. Thorne and Gross formed a third company, Adventure Products Inc., to produce and license a host of gadgets from variable-weight belts to submarine "flying belts."

Underwater Vacuum Cleaner

Nor do the applications of Gross' water manipulators end here. Like Lorenzo Jones, Gross has developed an outdoor vacuum cleaner—except that the Gross cleaner goes underwater. The vacuum cleaner pulls silt, seaweed, and water through the system, but deposits heavy particles—such as lost jewelry, archaeological objects, etc.—gently into a basket.

Like the large, cumbersome conventional suction systems, the "vacuum cleaner" can be used to build up beaches (by depositing sand from deeper water), keep river and channels free of debris, and undercut large objects buried in the bottom. But the new device has the advantage of being small, easily portable, versatile, and far more economical.

Ever try to shovel a hole in the ground underwater? Simply by using a small unit outfitted with a special propeller, you can unbury a treasure, survey for minerals, jet posts, or perform a variety of construction feats—all in perfect visibility because the "pipeless pipe" jetstreams away the silt.

It is certainly less fantastic, more economical, and easier to imagine neoprene-sheathed, air-masked farmers harvesting their crops with an Adventure Products "aqua-plow" than it is a bubble-domed spaceman growing anything on near-airless Mars. Both the French and the Japanese now

grow crops underwater, without benefit of specialized tools.

It's also fairly easy to visualize use of these tools in the coming mining of undersea minerals. One survey, by University of California scientists, estimates that loose-lying metal-bearing rocks are worth \$1½ million per square mile in some areas. Scientists at Plymouth, England have found appreciable quantities of the strategic niobium and vanadium in the flesh and blood of ascidians, sea animals similar to skates.

Increased exploration undoubtedly will result in similar industrially important findings. For instance, there's no reason to believe that undersea oil deposits are limited to the continental shelf. Most of the new underwater equipment can be remotely controlled and observed from the surface by closed-circuit TV.

Waterbelts And Waterphones

With explorers, scientists, farmers, miners, and oil men going more and more underwater, Gross and companies have turned their attention toward other devices. One is a "flying belt," intended to replace the unwieldy, uncomfortable, underwater "torpedoes" now in use.

Another device is expected to do for subsurface communications what the "belt" will do for transportation. The engineers have been experimenting with an underwater wireless sonar-type "telephone."

"After all," simplifies Gross, "air and water are both fluids. The only difference is that water is noncompressible. A good diver can talk underwater by taking the mouthpiece out of his mouth, but it's too difficult for most people and your range is limited. You have to be right next to each other."

The sonar microphone has a range of about 50 feet; it needs further development.

Today, The 'Adventure-Dart'

But an underwater protective device, Adventure Products' patent-pending "Adventure-Dart," is almost ready to go, and is slated to hit the skin diving market. The aqua-dart, a product of Gross' ordnance experience, is made of waterproof paper with a slow burning propellant and a variety of charges in the "warhead." One type has a deflagrating (non-exploding) charge for deterring dangerous sharks or barracuda in an emergency, or for blasting a hole through ice from underneath. In one experiment, the researchers blew a hole 3½ feet in diameter through 30 inches of ice from an underwater distance of 20 feet. The deflagration did not injure the diver's ears; in fact it was difficult to hear at that distance.

Other types contain deflagrating charges only. Water being noncompressible, these darts can be ignited and held in the hand with complete safety. Since fish are more sensitive than men to low-frequency sound vibrations, which are produced by the darts, the darts can be hand-held to ward off fish without harming them.

In operation, the dart is triggered, aimed, and released. It looks like a little torpedo traveling through the water at a stable 7½ feet per second. When it reaches its destination—a set 10 seconds and 75 feet later—it goes off into a bright ball of flame. If a diver wants to shoot something less than 75 feet away, he merely estimates the distance and holds the burning dart for the required balance of seconds.

The engineers feel the dart also will be used in undersea target games, since aim and distance depend upon the diver's skill.

Underwater manipulation, though heavily invested in necessary gadgetry in the beginning, also may make significant scientific contributions as the research continues. During one diving session, while Gross and Cramer were working out a thermostatic control for an aqua-therm, he noticed his voltmeter registered a charge when the leads were hanging in the water.

As every demolition engineer knows, a fickle kind of electrical variance exists on dry land. Hence the reason why ordnance men tie in all electrical weapon circuits to a common ground or shunt the leads of blasting caps.

Tomorrow, The 'Seabattery'

Realizing the voltmeter showed that a difference in electrical potential also exists in water, Gross placed long leads of the voltmeter in strata of different density. There was a difference of 1.4 volts. Even more significant was the fact that there was always a difference of 1.4 volts. Unlike on land, the electrical variance of water seemed to be constant. Thus, it might be utilized.

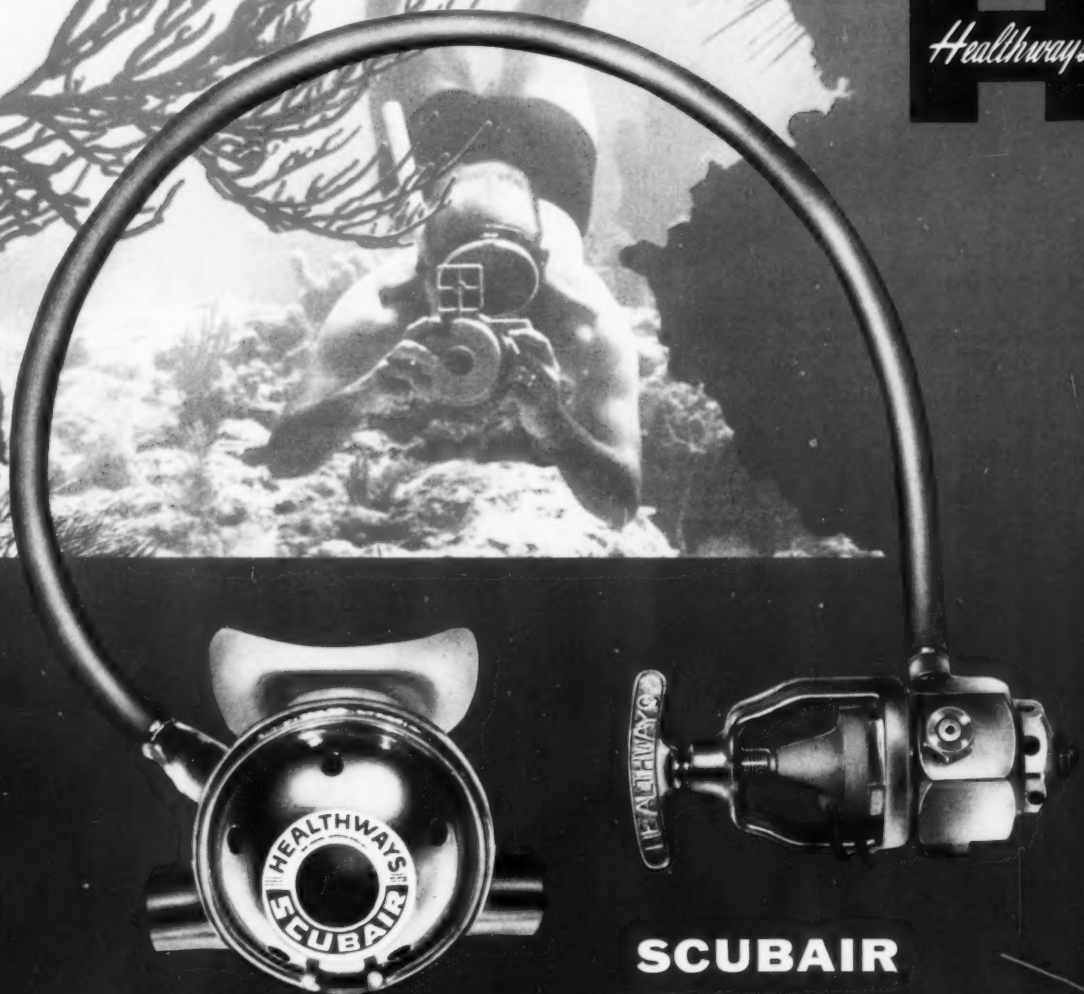
Gross now pictures powerless as well as pipeless "Aqua-Therms" and aerators, battery-less submarine telephones, and "flying belts" that draw their energy from the water itself—a perfect marriage, like sailboats and wind, or space sails and solar energy.

More research needs to be done, of course. But now it can be done, as Gross replies when someone asks how it is that all these "obvious" things haven't been developed before.

"You can't invent ahead of technology. Skin diving and submersible pumps had to precede water manipulation."

That and thought manipulation, which has to precede all progress. ➤

Photograph: James W. LaTourrette



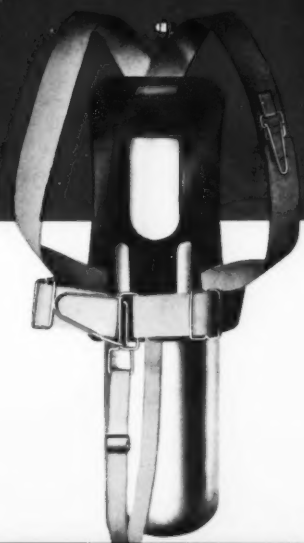
SCUBAIR

NO. 1665 \$37.50

SINGLE HOSE TWO STAGE REGULATOR

THE MOST THOROUGHLY TESTED AND EXPERTLY ENGINEERED SCUBA IN THE HISTORY OF SELF-CONTAINED DIVING!

A minimum of moving parts. The safest, most simple, most compact high-pressure and demand valves. A depth-compensated, automatic, precision air reserve is built into the unit. A high-test nylon and neoprene hose features a swivel-joint connection to the demand regulator. Center opening to diaphragm enabling diver to clear water from unit instantly. Eliminates protruding button that can lead to involuntary loss of air. Air exhaust is channeled so as to give unrestricted exhaling and to prevent air bubbles from obstructing vision. Revolutionary new "Quik-Klip" allows immediate removal of cover to facilitate inspection and maintenance and insures positive seal of diaphragm. All air connections have leakage-preventing "O" Ring seals. Entire unit made of chrome-plated brass with stainless steel springs. Contains attachment for Scubair Pressure Gauge. Tests with the SCUBAIR to a depth of 300 feet attest to the mechanical excellence of this unit.



SCUBAPAK HARNESS

Completely new design by Richard E. Anderson that combines safety, comfort and utility. The SCUBAPAK is made of a single sheet of specially-compounded corrosion-proof aluminum. A protective smooth-surface coating of resilient high-impact plastic makes the back plate impervious to salt water and the elements. The arrangement of the back plate puts the tank where it should be on the diver's back. The ingenious "continuous strap" arrangement of the harness brings about the most comfortable and secure Scuba harness ever designed. Equipped with Healthways improved Jet-O-Sen quick release buckle and a crotch strap that may be used at the option of the diver. Two easy-to-carry handles, designed as an integral part of the harness, make carrying your Scuba as easy as carrying a suitcase.



CRESSI GARIBALDI

The safety-yellow Garibaldi Cressi Deluxe Rondine Fin make the diver easy to spot thus adding to everybody's safety.

Super Deluxe Rondine Floating Fins — Safety Yellow

NO. 1376 Size 2-3	\$6.95 pr.
NO. 1377 Size 3-4	6.95 pr.
NO. 1378 Size 4-5	8.95 pr.
NO. 1360 Size 5-7	10.95 pr.
NO. 1361 Size 7-9	11.95 pr.
NO. 1362 Size 9-11	11.95 pr.
NO. 1363 Size 11-13	12.95 pr.
NO. 1364 Size 13-16	12.95 pr.



CRESSI COMPETITION

The added stiffness of the Rondine Competition model provides greater propulsion with fewer strokes. It permits the spear fisherman to get close to the fish faster, with a minimum of leg movement. It gives the Scuba diver maximum power and speed with slow motion, which helps regular breathing, thus preventing air waste.

THE FINS THAT MADE HISTORY AT MALTA

Black Gigante Rondine Fins

NO. 1355 Adj. Strap, Size 7-9	\$10.95 pr.
NO. 1356 Adj. Strap, Size 9-11	12.95 pr.
NO. 1357 Adj. Strap, Size 11-13	12.95 pr.
NO. 1358 Adj. Strap, Size 13-16	12.95 pr.



CRESSI MEDITERRANEAN

Mediterranean Blue — classic color for the world-renowned Floating Cressi Rondine Fin — in honor of the beautiful sea where skin diving was born.

Deluxe Rondine Floating Fins — Cressi Blue

NO. 1350 Size 5-7	\$9.95 pr.
NO. 1351 Size 7-9	9.95 pr.
NO. 1352 Size 9-11	10.95 pr.
NO. 1353 Size 11-13	11.95 pr.



CRESSI GENOA

We dedicate the most popular model of the Cressi Rondine fin to the city of Genoa, birthplace of Columbus.

Black Rondine Fins

NO. 1330 No Strap, Size 5-7	\$7.95 pr.
NO. 1331 No Strap, Size 7-9	7.95 pr.
NO. 1334 Adj. Strap, Size 9-11	8.95 pr.
NO. 1335 Adj. Strap, Size 11-13	8.95 pr.

PINOCCHIO "MODEL 1960" PROFESSIONAL MASK

Featuring a minimum air displacement, the imported ALL NEW Pinocchio offers up to 25% greater diving depth. This exclusive design allows compensation for underwater pressure on the ears. Newly created double-seal feather edge makes the Pinocchio absolutely leak-proof. Tempered glass safety lens.

NO. 1242 Safety Yellow\$5.95





THE OSTRICA

The Ostrica offers a safety control strap, stainless steel band and tempered glass safety lens.

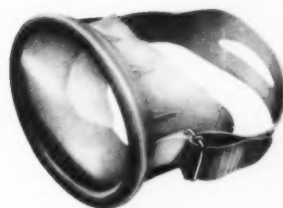
NO. 1241 Safety Yellow\$4.95



THE OSTRICA JR.

Designed for women and the smaller face, the Ostrica Jr. offers all the features of the regular Ostrica.

NO. 1239 Safety Yellow\$2.95



THE OSTRICA BANTAM

The Ostrica quality and features are now available for the younger set. The Ostrica Bantam is designed especially for children.

NO. 1240 Safety Yellow\$2.50



U.S. Pat. Pend.

THE ORIGINAL COMPENSATOR

The first mask combining the best features of all masks... wide-angle vision... an easy, system of hermetic nostril stoppage — the efficient way of compensating water pressure.

NO. 1223 French Blue\$5.95
NO. 1253 Safety Yellow 5.95



THE PANORAMIQUE

The exclusive design of the Panoramique brings the tempered safety glass lens closer to the eyes at a slant that offers undisturbed vision over a wider range. The contour type strap and the feather edge of the mask make a comfortable watertight fit.

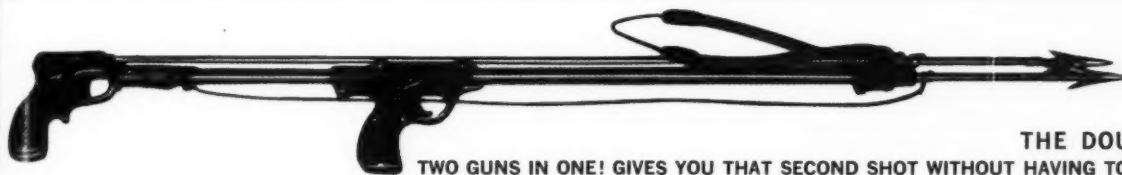
NO. 1222 French Blue\$4.95
NO. 1252 Safety Yellow 4.95



THE ESPADON

One of Europe's leading masks designed primarily for the smaller face, the Espadon features lightweight construction, tempered safety glass lens and a comfortable feather edge fit.

NO. 1220 French Blue\$3.95
NO. 1250 Safety Yellow 3.95



THE DOUBLETTE

TWO GUNS IN ONE! GIVES YOU THAT SECOND SHOT WITHOUT HAVING TO RELOAD!

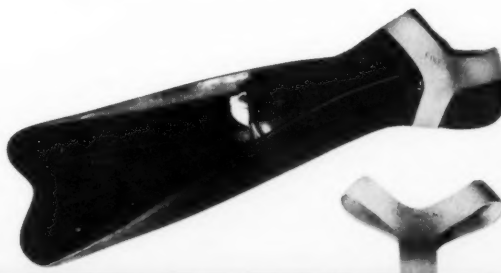
A gun with two spears — one spear powered by arbalete rubber sling and the second by an internal spring. All metal, rust and corrosion resistant. The Doublette is perfectly balanced for ease in underwater handling. Pistol grip handle with positive safety catch for arbalete spear release. Center pistol grip with positive safety catch for spring-powered spear release.

NO. 1520\$39.95

FIXE PALM (pat.)

A universal strap for added fin security. The latest development to hold any closed-heel type fin to your foot under the most turbulent conditions. The fin is held in three places: instep, arch and heel. Prevents heel of fin from slipping off.

NO. 1370 Med. 7-11\$1.75 pr.





1. **AQUASTAR DELUXE AUTOMATIC UNDERWATER WATCH** **NO. 1945** **\$79.95**
A watch designed for the diver with all these important features: automatic self-winding, bezel moving dial, calendar window, luminous radium markings, anti-magnetic and the finest 17 jewel movement
- AQUASTAR UNDERWATER WATCH** **NO. 1946** **\$34.50**
A Diver's watch from the world famous JeanRichard of Switzerland. 17 Jewel, Stem Wound Movement, Luminous markings Anti-magnetic.
2. **AQUASTARLET AUTOMATIC UNDERWATER WATCH** **NO. 1947** **\$49.95**
The finest compact size watch with all these outstanding features: Automatic Self-Winding, Bezel moving dial to record diving time, Luminous markings, Anti-Magnetic and a superb 17 Jewel movement
3. **250 FT. AQUASTAR PROFESSIONAL DEPTH GAUGE** **NO. 1957** **\$12.95**
The most precise divers gauge — Heavy chrome-plated brass. Curved wrist-fitting housing. Saltwater impervious strap.
4. **250 FT. AQUASTAR PROFESSIONAL COMPASS & DEPTH GAUGE COMBINATION** **NO. 1959** **\$14.95**
The most precise compass and depth gauge combination — Heavy chrome-plated brass. Curved wrist-fitting housing. Salt water impervious strap.



THE INKA

Extra Heavy-Duty Rubberized Canvas — inflatable four-seater sports boat. The perfect boat for the Skindiver and water-sportsman . . . folds up into a convenient shoulder carrying bag . . . can be used with an outboard motor.

NO. 3212, 48" x 112" \$165.00

LOBSTER BAG — Safety float

The most practical Lobster Bag ever designed, and an excellent safety and marker float. Zipper pocket — inflatable rim. Made of heavy-duty vinyl.

NO. 1992 \$6.95



Healthways

Write for your copy of the New Healthways Catalog showing the complete line of swim and skin diving, Air-Float and Tuff-Aire inflatables, Water skiing, Exercising and golf products.

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AND
CONFEDERATION**

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America
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P.O. Box
Champaign

Confederation
Activities
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331 Boule
Marquiere
Marseille

Alberta S
G. L. Gra
1304 4th S
Calgary.

B.C. Cou
Miss An
P.O. Box
Vancouver

Maritime
Don Chia
38 Ralph
Halifax,

Council of
Activities
Andr's L
Box 1687
GPO Adm

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c/o 6 Bed
London V

Federacio
Deportes
Luis E. P
Casilla 11
Santiago

Nederlän
Onderwa
H. A. van
Vlierboon

The Hagu
New Zeal
Research
Assoc.

F. G. Ler
P.O. Box
Auckland

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of Diving
Box 111
Lynwood

Central O
of Diving
Marlene
15558 Wi

San Leam
San Diego
Diving Cl
Keith Ka
3182 Den

San Diego
Colorado
Clubs
Lew Fun
P.O. Box
Englewoo
Connecti
Diving Cl
P.O. Box
New Hav

SKIN D

WORLD-WIDE ROSTER OF UNDERWATER CLUBS

This roster of underwater clubs and associations covering the majority of the organizations in the world has been compiled over the past two years in the offices of Skin Diver Magazine. In this list there are 32 Councils and Federations . . . 253 organized clubs and groups outside the United States . . . and 531 clubs within the United States. A total of 816 diving organizations are listed in this roster.

COUNCILS, FEDERATIONS AND CONFEDERATIONS

Underwater Society of America
Carl Hauber, Pres.
P.O. Box 724, Station A
Champaign, Ill.

Confederation Mondiale des Activités Subaquatiques (CMAS)
F. Clouzet
331 Boulevard de Sainte-Marquerite
Marseille, France

Alberta Skin Diver's Council
G. L. Gray
1804 4th St. S.W.
Calgary, Alberta, Canada

B.C. Council of Divers
Miss Anne Ashley
P.O. Box 2248
Vancouver, B.C., Canada

Maritime Diving Council
Don Chasson
38 Ralph Devlin Dr.
Halifax, N.S., Canada

Council of Underwater Activities of South Australia
Andr's Lidums
Box 1687
GPO Adelaide, Australia

The British Sub-Aqua Club
c/o 6 Bedford Square
London W.C. 1, England

Federacion Chilena De Deportes Submarinos
Luis E. Klein L.
Casilla 1133
Santiago de Chile

Nederlandsche Bond voor Onderwatersport
H. A. van Vlimmeren Jr.
Vlierboomstraat 366A
The Hague, Netherlands

New Zealand Underwater Research & Spearfishing Assoc.
F. G. Lennard
P.O. Box 1169
Auckland, New Zealand

Greater Los Angeles Council of Diving Clubs
Box 111
Lynwood, Calif.

Central California Council of Diving Clubs
Marlene Strawn
15558 Wicks Blvd.
San Leandro, Calif.

San Diego Council of Diving Clubs
Keith Kaonis
3182 Denver St.
San Diego 17, Calif.

Colorado Council of Diving Clubs
Lew Funk
P.O. Box 293
Englewood, Colo.

Connecticut Council of Diving Clubs Inc.
P.O. Box 1446
New Haven, Conn.

Alabama State Skin Divers Association Inc.
Ruby Payne
2814 Waters Ave.
Alabama City Station
Gadsden, Ala.

Southeast Council of Skin Diving Clubs
Pappy Flood - Bud Cox
P.O. Box 42543
Miami, Fla.

Southern Council of Skin Diving Clubs
George Krasle
465 Loredans Dr. NE
Atlanta, Ga.

Georgia State Skin Divers Association
Ginger Rubley
66 Pryor St. NE
Atlanta 3, Ga.

Illinois Council of Skin & Scuba Divers Inc.
William Gradolph
374 May St.
Elmhurst, Ill.

Midwest Diving Council
Mary Edith Lillia
Downtown YMCA,
404 East 10th
Kansas City, Mo.

Northeast Council of Skin Diving Clubs
Frederick Calhoun
P.O. Box 225
Fairhaven, Mass.

Michigan Skin Diving Council
Fred Shaft
22207 Lefever
Warren, Mich.

Mississippi State Skin Divers Assoc.
P.O. Box 9787
Jackson, Miss.

West Indies Skin Diving Council
Bob Robinson
Route 3, Box 179
Jackson, Miss.

New Jersey Council of Diving Clubs
John Brown
Tulip Rd.
Llewellyn Park
W. Orange, N.J.

Empire State Underwater Council
Gene Parker
Johnson Road RD #4
Scotia, N.Y.

Rhode Island Council
John J. McAniff
184 Bellevue Ave.
Newport, R.I.

Southwest Council
Hal M. Lattimore
Continental Life Bldg.
Fort Worth, Texas

Atlantic Skin Diving Council
C. K. "Rusty" Sherrill
4104 33rd Street
Arlington 6, Va.

Washington Council of Skin Diving Clubs
Richard Klein
18622 26th W.
Alderwood Manor, Wash.

FOREIGN CLUBS

AFRICA

Salisbury Branch British Sub-Aqua Club
W. T. Kersey
P.O. Box 776
Salisbury, So. Rhodesia, Africa

ALGERIA

Club Algerois de Sports Subaquatiques
Sennadi Amar-Henri
Aero Habitat 118 Boulevard du Coemly
Alger, Algeria

AUSTRALIA

Lone Sharks
Andris Lidums
6 Myrtlebank Terrace
Stonyfell
Adelaide, So. Australia

Underwater Explorers Club of Western Australia Inc.
Harold Roberts
524 Great Eastern Hwy.
Greenmount, W. Australia

The Victorian Sub Aqua Group
P. Matthews
3 Holroyd Court,
East St. Kilda
Melbourne, Victoria
Australia

The Underwater Skin Divers & Fishermen's Assoc. of Queensland
Walt C. Deas
18 Lockhart St.
Dutton Park, Brisbane
Queensland, Australia

AUSTRIA

Kartner Unterwasser Sportklub
Bahnhofstrasse 38 a
Klagenfurt, Austria

Tauchclub Austria
Helmut Ivo
Box 21
Vienna, Austria

Tauch Sport Club
Fridl Althaller
Annenstrasse 42
Graz, Austria

BERMUDA

The Sea Venturers
H. C. D. Cox
Thos. Miles & Co.
Hamilton, Bermuda

Belmont Sous-Marin
Charles R. Burnett
Belmont Manor
Warwick, Bermuda

BRITISH WEST INDIES

Barbados Sub-Aqua Club
E. M. Wooton
16, Block A Garrison
Bridgetown, Barbados,
B.W.I.

Jamaica Branch
S. A. Downton
c/o U. K. Trade
Commissioners Office,
Barclays Bank Bldg.
P.O. Box 393
Kingston, Jamaica

CANADA

ALBERTA

Aquateers of Canada
Box 1746 RCAF Station
Cold Lake, Alberta, Canada

Calgary Sub-Aquatic Club
A. W. Osterberg
124 3rd Ave. SW
Calgary, Alberta, Canada

Alberta Underwater Club
Ron Head
9054 93rd St.
Edmonton, Alberta, Canada

BRITISH COLUMBIA

Burnaby Sub-Aquateers
Curt Pridmore
3803 Union St.
Burnaby 2, B.C., Canada

B.C. Divers
Jack Hume
Box 1269
Cranbrook, B.C., Canada

Van Isle Snorkelers
Ross Hamilton
P.O. Box 1213
Duncan, B.C., Canada

Nanaimo Devil Fish Diving Club
Pete Hansen
304 Pine St.
Nanaimo, B.C., Canada

Port Alberni Skin Diving Club
Peter Campbell
209 9th St.
Port Alberni, B.C., Canada

Herring Dodgers
Gunter Diehl
P.O. Box 293
Prince Rupert, B.C., Canada

Aqua-Soc
Box 85, Alma Mater Society
University of British Columbia
Vancouver 8, B.C., Canada

B.C. Sea Searchers
John Moore
246 W. 13th Ave.
Vancouver 10, B.C., Canada

B.C. Tel-Aqua Club
Gil Saunier
2205 W. 20th Ave.
Vancouver, B.C., Canada

North Shore Tritons
I. Parry
194 E. Osborne Rd.
North Vancouver, B.C., Canada

Victoria Reef Rovers
Pearl E. White
1429 Taunton Rd.
Victoria, B.C., Canada

Victoria Skin Divers Club
Denny Kempton
701 Connaught Rd.
Victoria, B.C., Canada

West Vancouver Scuba Club
Pierre E. Christen
1170 Mathers Ave.
West Vancouver, B.C., Canada

MANITOBA

Cranberry Polar Pups
Ed Johnson
Cranberry Portage,
Manitoba, Canada

Arctic Free Divers
c/o HMCS Churchill
Fort Churchill,
Manitoba, Canada

Fort Asborne Skin Diving Club
Capt. D. S. Caldwell MC
182 Ubique Crescent
Winnipeg 9,
Manitoba, Canada

NOVA SCOTIA

Halifax Free Divers
William Mont
Box 1-13-126
Spry Field, N.S., Canada

Dolphins Skin Diving Club
Art Covey
Sydney River
Cape Breton, N.S., Canada

Cape Breton Underwater Club
S. G. Naish
38 Rigby Rd.
Sydney, N.S., Canada

ONTARIO

Aquateers of Canada
J. W. R. Johns
P.O. Box 114 RCAF Stn.
Camp Borden, Ont., Canada

The Hamilton Barrascuba Club
Bill Barnard
c/o Aquatic Director
Hamilton YMCA
James Street S.
Hamilton, Ont., Canada

Hamilton Sub-Mariners
Frank Halliwell
P.O. Box 194 Stn. B
Hamilton, Ont., Canada

Hamilton Tiger Sharks
Andy Varady
115 Augusta St.
Hamilton, Ont., Canada

Stratford YMCA Scuba Club
Robert Ferguson
YMCA 190 Downie St.
Stratford, Ont., Canada

(Continued)

WORLD-WIDE ROSTER OF UNDERWATER CLUBS

Canal Zone, Ceylon, Cuba, England, Finland, France, Germany

Underwater Club of Trenton
Roy E. Miller
22 Weeks Ave.
Trenton, Ont., Canada

Underwater Club of Canada
C. B. Davis
Box 26, Adelaide P.O.
Toronto, Ont., Canada

West End Y Poseidons
Bill Viksten
West End YMCA
931 College St.
Toronto 4, Ont., Canada

K.W. Dolphins
Jerry Conner
172 Rodney St.
Waterloo, Ont., Canada

QUEBEC

Sports Aquatiques
Jean Paul Veillette
540 De Rue
Grandmère, Que., Canada

Ottawa Skin and Scuba Diving Club
John Cunningham
4567 Hochelage St.
Montreal, Que., Canada

Water World Club
530 St. Zotique
Montreal, Quebec, Canada

Rimouski Skin Divers Assoc.
Raymond Gagne
134 St. Joseph St. E.
Rimouski, Quebec, Canada

CANAL ZONE

Atlantic Skin Diving Assoc.
P.O. Box 636
Margarita, Canal Zone

CEYLON

Reefcombers of Ceylon
A. G. Buxton
P.O. Box 163
Colombo, Ceylon

CORSICA

Centre Corse D'Exploration Sous Marine
Docteur Gugliemi
1 Avenue rue Consul—
Ajaccio
Ajaccio, Corse

CUBA

Club de Cazadores Submarinos
Marcelo Salado Dela
Provincia Dela Habana
Luis Vazquez
Avenida Central y
492 Guanabo
Habana, Cuba

Club Cazadores Submarinos y Deportivo
Delas Playas de Guanabo
Ave. Central y Primera
Habana, Cuba

Los Demonios Del Mar
Norberto Palomeque
Zanja No. 824
Habana, Cuba

ENGLAND

Three Fathoms Club
J. R. Plumpton
c/o Portsmouth Sailing Club
5 Bath Square
Old Portsmouth
Hampshire, England

BRITISH SUB-AQUA CLUBS

London Branch
Mr. S. Thomas
37 a Huntley St.
London W.C. 1, England

East Lancs Branch
D. Farley
29 Valley House
Oversley Ford
Wilmslow, Cheshire, England

Bristol Branch
P. J. Roles
23 Winchester Rd.
Brislington
Bristol 4, England

Blackpool Branch
D. Sherwood
46 Granville Rd.
Blackpool, England

Merseyside Branch
A. H. Smith
5 Glencoe Rd.
Wallasey, Cheshire, England

Bournemouth Branch
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4a Wimbourn Rd.
Bournemouth,
Hants, England

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Worthing, Sussex, England

Torbay Branch
Mrs. L. Damerell
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Shipway, Torquay
Devon, England

Southsea Branch
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122 Castle St.
Portchester,
Hants, England

Taunton Branch
Miss J. Bide
Lilac Cottage
Trull, Taunton
Somerset, England

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15 Seaford Close
Gt. Yarmouth,
Norfolk, England

North Staffs Branch
W. Beech
98 Dartmouth Ave.
Newcastle, Staffs, England

Northampton Branch
J. C. C. Warren
The Lodge, Brisworth Hall
Brisworth,
Northants, England

Hull Branch
M. P. Squance
118 Wolfraton Lane
Willerby, Hull, England

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A. W. Hayden
78 Grosvenor Park Rd.
London E. 17, England

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32 Percival Rd.
Sherwood,
Nottingham, England

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220 Kew Rd.
Richmond, Surrey, England

Huddersfield Branch
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Aich Cottage, 7 The Avenue,
Wilshaw, Meltham,
Huddersfield, England

General Branch
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25 Orchard Rd.
Kingston-on-Thames,
England

Westminster Sea Scouts
W. J. Best
78 Chaucer Ho.
Churchill Gardens S.W. 1,
England

Edinburgh Branch
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11 Clermiston Ave.
Edinburgh 4, England

Southend Branch
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8a Salisbury Rd.
Leigh-on-Sea,
Essex, England

Croydon Branch
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c/o 6 Bedford Sq.
London W. C. 1, England

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Birmingham, England

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32 Oak Tree Gardens
Bromley, Kent, England

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14 Clifton Rd.
Bognor Regis, England

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Berks, England

Ipswich Branch
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Felixstowe, Suffolk, England

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6 Bloomfield Ave.
Bath, England

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The Willow Studio
Ferry Hinksey,
Oxford, England

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208 Caerleon Rd.
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Sheffield 8, England

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28 Dame Kendal Grove
Nunthorpe, Grimsby, England

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Woodlands,
Harrogate, Yks, England

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Weymouth, England

Mexborough Branch
Miss V. Whitehead
10 Springfield Rd.
Kilnburg, Nr. Rotherham
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58 Treherne Rd.
Briston S.W. 9, England

Tees-Side
W. Kendrick
23 Seaham St.
Stockton-on-Tees
Co. Durham, England

Bradford Branch
W. R. Drury
119 Hall Lane
Horsforth, Nr Leeds,
England

Chelsea Branch
Miss Lia Low
99 Elm Park Gardens
London S.W. 10, England

Swindon Branch
J. E. Hamilton
11 Springfield Rd.
Swindon, Wilts, England

Darwen Branch
J. Bolton
59 Winston Rd.
Blackburn, Lancs., England

Halifax Branch
D. C. Sanderson
Mutton Hall Farm
Pharaoh Lane, Illingworth
Halifax, England

Ilford Branch
Mrs. E. V. G. Wheeler
16 Park Ave.
Ilford, Essex, England

York Branch
G. B. Wright
76 Windmill Rise
York, England

Cambridge University Branch
N. C. Flemming
Pembroke College
Cambridge, England

Guilford Branch
P. D. Levack
5 Hawthorne Way
Bulpham
Guilford, Sy., England

Harwich Branch
R. P. Stallworth
9 Dove Crescent
Dovercourt, Harwich,
England

Hounslow Branch
L. G. Denyer
198 Twickenham Rd.
Isleworth
Middlesex, England

Plymouth Branch
B. Martin
"Rodosto" 3 Pomphlett
Villas, Billacombe Rd.
Plymouth, England

Coventry Branch
R. E. Bacon
20 May St.
Foleshill, Coventry, England

Medway Branch
N. A. Morris
64 Selbourne Rd.
Gillingham, Kent, England

Aldershot Branch
D. James
5 Sydney Villas
Ash Vale, Frimley Rd.
Surrey, England

Furness Branch
H. Woods
46 Mikasa St.
Walney, Barrow-in-Furness
Lancs., England

Exeter Branch
T. S. Symons
The Gables, 1 Bell Vue Rd.
Exmouth, Devon, England

Imperial College Branch
D. H. Matthews
Imp. Col. Union
Prince Consort Rd.
S.W. 7, England

Mumbles Branch
Miss F. Rowe
74 St. Helens Ave.
Swansea, England

London University Branch
G. Stone
45 Merlin Grove
Beckenham, Kent, England

Islington Branch
H. P. J. Bruwer
c/o London House
Guildford St. W.C. 1,
England

Gwynedd Branch
J. Mackey
81 Queens Rd.
Llandudno, Caerns, England

Derby Branch
Mrs. P. F. Hodgkinson
10 Instow Dr.
Littleover, Derby, England

Wycliffe College Branch
D. Paul
Wycliffe College
Stonehouse, Glos., England

H.M.S. Heron Branch
C. P. O. Wright, R.C.
C.P.O.'s Mess R.N.A.S.
Yeovilton, Som., England

FINLAND

Urheiluskelitajat r.y.
Ora Patoharju
Fredrikinkatu 12 B 41
Helsinki, Finland

FRANCE

Club Alpin Sous Marin
H. Broussard
10 Place du
Commandant Lamy
Cannes, France

L'Exploration Sous Marine
Andre Portelatine
14 Quai des Docks
Nice, A.M., France

Club Sous-Marin Pau-Ocean
J. P. Aulanet
6, Rue Edit-de-Nantes
Pau, Basses Pyrenees, France

Club De Recherches et Expéditions Sous-Marines
J. P. Aulanet
8, Avenue Malsence
Pau, B.P., France

GERMANY

DUC Berlin
Mansfelderstr 34
Berlin-Wilmersdorf,
Germany

DUC Darmstadt
Geschäftsstelle W. Lich
Darmstadt, Germany

DUC Hamburg
Jens-Peter Paulsen
Hagenau 25
Hamburg 23, Germany

Tauchtgruppe Kiel
Egon Breyer
Klingenbergstrasse 20
Schwentin
Kiel-Klausdorf, Germany

Tauch und Yacht Club Saar
Walter Lichtblau
Bergstr. 27
Geschäftsstelle
Gudingen-Saar, Germany

Tauch Club
Friedhofstr. 25
Stuttgart-N, Germany

Tauchgruppe der DLRG
Dr. Jos. Reusch
Saarstrasse 16
Trier, Germany

Unterwasserforschungsgruppe Bodensee
Prof. Dr. Reinert
Hofstätt 3
Überlingen, Germany

Unterwasser Club Manta
A. Rolf Kannenberg
Spiekeroozstrasse 1
Wilhelmshaven, Germany

DUC Dusseldorf
Dr. Carlheinz Fey
Jahnstrasse 2b
Dusseldorf, Germany

DUC Duisburg
Heinz Reichel
Dusseldorfer Landstr. 225
Duisburg-Huckingen,
Germany

Arbeitsgemeinschaft für Tauchsport Essen
Hans Strotgen
Ruttensteiner Strasse 2
Essen-Ruttensteiner,
Germany

DUC Köln
Bernhard Schneider
Schlossstrasse 40
Köln-Stammheim, Germany

DUC Krefeld
Schmidt-Ries
Wald-Winkel
Krefeld-Hulsenberg,
Germany

Arbeitskreis für Unterwasserkunde der Geographischen Gesellschaft
Otto Flossel
Viktoriastrasse 185
Krefeld, Germany

Tauchsport und Forschungsgruppe Munster
Fritz Rose
Travelmannstrasse 15
Munster, Germany

Tauchsport und Forschungsgemeinschaft Siegerland
Hinterstrasse 21
Siegerland, Germany

Arbeitskreis für Tauchsport Augsburg
Franz Herda
Lehnigerstrasse 9
Augsburg, Germany

DUC Bamberg
Andr. Dobroschke
Pfisterstrasse 6
Bamberg, Germany

DUC Bremen
Herbert Möller
Bachstrasse 102
Bremen, Germany

I. G. Unterwassersport Bonn
Peter Fritzsche
Rheinforster Strasse 110a
Bonn-Beuel, Germany

Dortmunder-Amateur-Tauch-Sport-Club
H. A. Jennemann
Oesterholzerstrasse 78
Dortmund, Germany

Tauchsportabteilung im WSV Niederrhein
F. A. Groot
Koloniestrasse 193
Duisburg, Germany

TAUCHSPORT des SV H.
Jakob Roß
Wilhelmstr.
Eschweiler,
Aachen, Germany

Interessengemeinschaft Unterwasser
Armin K.
Altkönigsstr.
Frankfurt, Germany

DUC Has
Otto Lott
Gottlingen
Hannover, Germany

Tauchsport Mannheim
O. F. Ehrh
Philosophen
Heidelberg, Germany

Deutscher Tauchclub
Dr. A. Böhm
Maria H.
München, Germany

Wolfgang
Furterstr.
Neuss, G.
Stolberg,
Peter De
Rosenweg
Stolberg,
Interesse
für Tauch
Gerd Vog
Schöne G
Wuppert
Germany

HONG KONG

The Hong Kong Club
D. L. Go
c/o Shew
Ltd.
9, Lee Ho
Hong Kong

HUNGARY

Unterwasser
Reil Laj
Aranyke
Budapest

IRELAND

Belfast 1
Sub-Aqua
J. G. St
26 Mount
Belfast,

ISRAEL

Haifa U
fishing C
S. Sioni
Haifa
Haifa P
Haifa, I
Nahariy
Gideon
Alyah S
Nahariy
Underw
Jacob A
Joheskel
Tel-Aviv

ITALY

Circolo "Versili"
Dr. Pied
Via Car
Forte de
Luca, I
Club Su
Alberto
Riviera
Gallipoli
Circolo
comm.
Via Chi
Napoli.
S.S. Su
Lucio B
Pretura
Paola, C
Gorgona
Circolo
Prof. F
Via Cla
Pisa, It
Club Se
Portofin
Dr. G. J
Portofin
Circolo
De Sane
Via V.
c/o A.
Torino,

SKIN DIVER—February 1960

SKIN

Tauchsportabteilung des SV Hellas
Jakob Roth
Wilhelmstr. 68
Eschweiler,
Aachen, Germany

Interessengemeinschaft für Unterwassersport
Arnim Kempfer
Altkönigsstrasse 11
Frankfurt, Main, Germany

DUC Hannover
Otto Loth
Göttinger Strasse 52
Hannover-L, Germany

Tauchsport-Club Mannheim-Ludwigshafen
O. F. Ehm
Philosophenweg 4
Heidelberg, Germany

Deutscher Tauch-Club
Dr. A. Beckh
Maria Hill Strasse 9
München, Germany

Tauchsportfreunde Neuss
Wolfgang Farnroth
Furterstrasse 19
Neuss, Germany

Stolberg Tauchsportclub
Peter Delsing
Rosenweg 15
Stolberg, Rhld., Germany

Interessengemeinschaft für Tauchsport
Gerd Vogelsang
Schöne Gasse 8
Wuppertal, Elberfeld, Germany

HONG KONG

The Hong Kong Underwater Club
D. L. Goldsmith
c/o Shewan, Tomes & Co. Ltd.
9, Ice House St. P.O. Box 115
Hong Kong

HUNGARY

Unterwasser Jager Club
Karl Lajos
Aranykezy u. 7
Budapest 5, Hungary

IRELAND

Belfast Branch British Sub-Aqua Club
J. G. Stuart
26 Mountcote Park, Cavehill,
Belfast, Ireland

ISRAEL

Haifa Underwater Spearfishing Club Israel HUSCI
S. Sioni
Hagadil Str. 8
Haifa POB 4170
Haifa, Israel

Nahariya Skin Diving Club
Gideon Hirschfeld
Aliyah Str. 6
Nahariya, Israel

Underwater Sports Society
Jacob Aviyam
Jeheskel Str. 16
Tel-Aviv, Israel

ITALY

Circolo Cacciatori Subacquei "Versilia"
Dr. Pietro Toin
Via Carducci 13
Forte dei Marmi
Lucca, Italy

Club Subacqueo
Alberto Laviano di Sombrino
Riviera N. Sauro No. 33
Gallipoli, Lecce, Italy

Circolo Subacquei Napoletani
comm. rag. Michele Lisi
Via Chiaia 96
Napoli, Italy

S.S. Sub. "Sergio Scotti"
Lucio Babucci
Preturo
Paola, Cosenza, Italy

Gorgona Club
Circolo Pescatori Subacquei
Prof. Franco Bastreggi
Via Carmignani 6 r.
Pisa, Italy

Club Settemarino di Portofino
Dr. G. F. Pulitzer
Portofino, Genova, Italy

Circolo Subacquei Torino
De Sanctis Victor Aldo
Via V. Alfieri 6
c/o A. C. Torino
Torino, Italy

Circolo Subacquei Finalesi
Tritzo Federico
Via Saecone 4 c/o Bar Sport
Finale Ligure
Savona, Italy

MARIANAS ISLANDS

Mid-Pacific Seuba Club
Virginia Cone
Camp Asan, Station 8
Guam, Marianas Islands

MAROC

Club Subaquatique Marocain
Rene Delrieu
Square Borly,
Place Mohammed V
Rabat, Maroc

Groupe D'Activites Sous-Marines de Rabat
31, Rue Lavoisier
Rabat, Maroc

MEXICO

Anfibios Del Loyola
J. Raul Bracamontes Medina
Madero 261
Colima, Mexico

Club de Caza Submarina Mitanes, AC
Ernesto Zaragoza
Av. Serdan No. 82
Guaymas, Son., Mexico

Club de Buco "Y"
Av. Ejercito Nacional 253
Mexico, D.F., Mexico

NEW ZEALAND

Bay of Islands Underwater Research & Spearfishing Club, Inc.
K. George
Raihara St.
Kaikohe, Northland, N.Z.

Whangarei Underwater Spearfishing Club Inc.
Mrs B. P. Taylor
1 Davis St.
Whangarei, N.Z.

Dolphin Club Inc.
Derek Pollar
P.O. Box 30-067
Takapuna,
Auckland, N.Z.

Auckland Underwater Club Inc.
Miss C. Pool
P.O. Box 3236
Auckland, N.Z.

Waikato Underwater Club
Mrs. J. O. Blackwood
14 Cunningham Rd.
Beerscourt, Hamilton, N.Z.

Penguin Underwater Club Inc.
R. J. Longley
4 Willow St.
Tauranga, N.Z.

Tangaroa Underwater Club
W. Ohai
Welcome Bay R. D.
Tauranga, N.Z.

Whakatane Underwater Spearfishing Club
G. Carr
James St.
Whakatane, N.Z.

Rotorua Underwater Club
G. Coppard
9 Isabel St., Rotorua, N.Z.

New Plymouth Underwater Club
R. D. McDonald
P.O. Box 266
New Plymouth, N.Z.

Napier Spearfishing Club
Miss R. K. Sellar
26 Havelock Rd.
Napier, N.Z.

Hastings Underwater Club
A. G. Dobbins
5 Vigor Brown St.
Napier, N.Z.

Wanganui Underwater Club
J. C. Baker
5 Bignell St.
Gonville, Wanganui, N.Z.

Manawatu Underwater Research & Spearfishing Club
c/o 539 Main St.
Palmerston North, N.Z.

Wairarapa Underwater Club Inc.
D. K. Christiansen
P.O. Box 10
Masterton, N.Z.

Hutt Valley Underwater Club
L. E. Banks
235 Riverside Dr.
Waterloo, Lower Hutt, N.Z.

WORLD-WIDE ROSTER OF UNDERWATER CLUBS

Hong Kong, Hungary, Ireland, Israel, Italy, Maroc, Mexico, New Zealand, Puerto Rico, Scotland, South Africa, South America, Spain, Sweden, Switzerland, Yugoslavia

Wellington Underwater Club Inc.
R. A. Tomlin
P.O. Box 2571
Wellington, N.Z.

Marlborough Underwater Club Inc.
B. Hildreth
Rose St.
Roseland, Blenheim, N.Z.

Canterbury Underwater Club
P.O. Box 1379
Christchurch, N.Z.

South Canterbury Sub-Aqua Club
A. S. Lewin
P.O. Box 91
Timaru, N.Z.

Otago Underwater Club
Miss A. M. McDonald
11 de Lacy St.
Main, West Harbour,
Dunedin, N.Z.

Mercury Bay Underwater Club
G. White
P.O. Box 51
Whitanga, N.Z.

Invercargill Underwater Club
Auckland Underwater Research Unit
Gisborne, Wairoa, N.Z.

N.Z. Underwater Research & Spearfishing Assoc.
F. G. Lennard
P.O. Box 1169
Auckland, N.Z.

PUERTO RICO

El Moro Marlins
Don Santesson
P.O. Box 10481
Caparra Heights,
Puerto Rico

Caribe Aquahunters
Ted Crowther
P.O. Box 1990
Ponce, Puerto Rico

SCOTLAND

Aberdeen Sub-Aqua Club
Miss E. M. Allan
22 Viewfield Gardens
Aberdeen, Scotland

Dundee Sub-Aqua Club
C. Doyle
12 Donnon Rd.
Dundee, Angus, Scotland

Edinburgh Sub-Aqua Club
W. Marshall
11, Clermiston Ave.
Edinburgh, Scotland

Edinburgh University Biological Society (Sub-Aqua Branch)
B. Leigh
6, St. Catherine's Pl.
Edinburgh 9, Scotland

Scottish Sub Aqua Club
Frank Callaway
38 Kilmount Ave.
Glasgow S. 4, Scotland

SOUTH AFRICA

Flase Bay Spearfishing Club.
John S. Battersby
507 Libertas
Hertzog Boulevard
Cape Town, South Africa

Dolphin Underwater Club
P.O. Box 1513
Port Elizabeth, South Africa

SOUTH AMERICA

ARGENTINA
Club de Cazadores y Exploradores Submarinos
Ricardo M. Mandojana
Zabala 2520
Buenos Aires, Argentina

BRAZIL

Club Catarinense de Caca Submarina
Georges W. Wildi
Caixa Postal 115
Florianopolis, Santa Catarina, Brazil

CHILE

Federacion Chilena de Deportes Submarinos
c/o Luis E. Klein L.
Casilla 1133
Santiago de Chile

Club Neptuno
Ivan Zanelli G.
Obispo Donoso 18
Depto 42
Santiago de Chile

Club de Hombres Rana "Zapallar"
c/o Luis E. Klein L.
Casilla 1133
Santiago de Chile

Club de Deportes Submarinos "La Serena"
Casilla 67
La Serena, Chile

Club de Deportes Submarinos "Quintero"
Marchant Pereira 489
Santiago de Chile

Club de Deportes Submarinos "Pacífico"
Mapocho 2743
Santiago de Chile

Club de Deportes Submarinos "Ferroviario"
Estacion Alameda
Seccion Vias y Obras
Santiago de Chile

Club de Deportes Submarinos "Santiago"
Bellavista 301 Dep. 1
Santiago de Chile

Club de Deportes Submarinos "Delfin II"
Andres Viveros 2874
Santiago de Chile

Club de Deportes Submarinos "Las Cruces"
Huerfano 1147 Of. 637
Santiago de Chile

Club de Deportes Submarinos de la Armada Nacional
c/o Capitan de Fragata Sr. Custodio Labbe L.
Escuela Naval "Arturo Prat"
Correo Naval
Valparaiso, Chile

Club Nautico "Zapallar"
Casilla 1133
Santiago de Chile

Club Deportivo Ferroviario secc. Deportes Submarinos
Chiloe 1163
Santiago de Chile

Club Deportivo Ferroviario Estacion Baron
Valparaiso, Chile

Club de Buco "Mejillones"
c/o Miguel Aguirre
Casilla 56
Mejillones, Chile

Club Deportes Submarinos "Huasco"
Capitania de Puerto Huasco, Chile

SPAIN

Centro de Investigaciones y Actividades Subacuaticas (C.I.A.S.)
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C.I.A.S.
Antonio Ribera
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Hurtado Amezaga, 10
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Agrupacion de Estudios Oceanograficos y de Exploraciones Arqueologicas Submarinas
Nicolas Brondo Oliver
Balears, Spain

SWEDEN

Swedish Skin Diving Union
Odinsgatan 3
Goteborg C, Sweden

SWITZERLAND

Federation Suisse de Sports Sous-Marins
Case Postale 249
Geneve 1, Switzerland

Federation Suisse de Sport Sous-Marins
Case 2657
Zurich, Switzerland

Schweizer Unterwassersport-Verband
Postfach 2657
Zurich 23, Switzerland

USZ Zurich
Wiesenstr. 3
Zurich, Switzerland

USZ Basel
Ahornstr. 27
Basel, Switzerland

USZ Bern
Bernstr. 54
Bern, Switzerland

USZ Biel
Zukunftstr. 16
Biel, Switzerland

USZ Luzern
Lorenzstr. 5
Luzern, Switzerland

CSS Lugano
Corso Pestalozzi 3
Lugano, Switzerland

Schweiz. Unterwasser Club Glaukos
Wiesenstrasse 5
Zurich, Switzerland

Schweizer Tauch Club Manta
H. Maurer
Ziegelstrasse 17
Zurich, Switzerland

YUGOSLAVIA
Drustvo Za Podvodne Sportove
Prilaz J.N.A. br 8/11
Zagreb, Yugoslavia
(Continued)

WORLD-WIDE ROSTER OF UNDERWATER CLUBS

UNITED STATES

ALABAMA

Auburn Tiger Sharks
Billie Head
Social Center
Auburn University
Auburn, Ala.
The Enterprise Scuba
Coalers
Mrs. A.E. Murchison
405 N. Rawls
Enterprise, Ala.
Gaddens Meredevils
2814 Waters Ave.
Alabama City Station
Gadsden, Ala.
Alabama State Skin
Diving Assoc.
Graven O'Bryant
P.O. Box 501
Glencoe, Ala.

ALASKA

Whittier Aquatics Club
Fred D. Joiner
Gen. Del.
Whittier, Alaska

ARIZONA

Arizona Cactus Divers
William L. Van Zandt
2035 N. 52nd St.
Phoenix, Ariz.
Phoenix YMCA Skin Divers
W. J. Uren
5307 Calle Redonda
Phoenix, Ariz.
Desert Divers
P.O. Box 1223
Winslow, Ariz.

CALIFORNIA

Kelp Kings of Alhambra
Eric S. Eichmann
1000 S. Fremont Ave.
Alhambra, Calif.
Lemon Grove Penguins
Rt. 1 Box 436
Alpine, Calif.
Muirmen
Frank Hops
2343 Glen Canyon Rd.
Altadena, Calif.
Fullerton Sea Prowlers
Dennis Mathes
829 Zeyn St.
Anaheim, Calif.
N.A.A. Sea Sabres
Samuel Miller
1332 Malboro Ave.
Anaheim, Calif.
Sea Angels of
Southern California
Chris Lyles
1926 W. Sloop Ave.
Anaheim, Calif.
Royal Dolphins
Gerald E. Hetzer
350 Sky Oaks Dr.
Angwin, Calif.
Rohr Eels
Jack Riley
3311 Arrowhead
Arlington, Calif.
Castle Scuba Club
Jack D. Brown
Box 433
Atwater, Calif.
Bakersfield Frogmen
Roy W. Loyd
341 Oakdale Dr.
Bakersfield, Calif.
Diving Demons
Ray Etcheverry
3234 Belle Terrace
Bakersfield, Calif.
Squid Diddlers
14610 Lakewood
Bellflower, Calif.
Deep Wanderers
Jan Sanderson
2423 Lincoln St.
Burbank, Calif.
Aqua Raiders
Robert B. Thompson
2-524 Mandell St.
Canoga Park, Calif.
San Dieguito Diving Club
Bob Gooding
2157 Edenburg Ave.
Cardiff-By-The-Sea, Calif.
Carmel Bathing Association
Bob Moore
P.O. Box 2366
Carmel, Calif.
Aquaphytes
1313 S. Sloan
Compton, Calif.

Divers Inc.
Ed Prader
14510 Gibson
Compton, Calif.

Power Divers
Chuck Stewart
1318 S.Center
Compton, Calif.

Diablo Divers
Jack Weisman
2156 Pacheco St.
Concord, Calif.

Junior Diablo Divers
Jack Weisman
2156 Pacheco St.
Concord, Calif.

Seafarers
John B. Weisman
2156 Pacheco St.
Concord, Calif.

Newport Whalers
Marlene McLain
232-B Cecil Pl.
Costa Mesa, Calif.

Seadowners Underwater
Hunting Club
Bill Hazen
11036 Culver Blvd.
Culver City, Calif.

Laguna Free Divers
Robert V. Bowers
7844 E. Vista Del' Rosa
Downey, Calif.

Sea Sabres
Dave Dittman, 462-4
75 North American Aviation
12214 Lakewood Blvd.
Downey, Calif.

Southern California
Skin Diver's Club
Robert B. Fennell
526 Maryland St.
El Segundo, Calif.

Humbolt Skin Divers
Will Antonson
2408 Meadow Lane
Eureka, Calif.

Fresno Skin Divers Inc.
Jim Jewett
419 E. Buckingham Way
Fresno 4, Calif.

Pacific Grove Looney Gooneys
Dee Marsh
212 Revere Ave.
Hayward, Calif.

Inland Divers Club
Junnane Pinckert
26930 Stratford
Highland, Calif.

La Canada Argonauts
Diving Club
Bob Beer
1010 Olive Lane
La Canada, Calif.

Neptune's Raiders
of So. Calif.
Orvil Hopper
4519 Dunrobin Ave.
Lakewood, Calif.

Sea Searchers
Chet Lindt
24795 Tulip Ave.
Loma Linda, Calif.

Anguilla Maurena
Wes Smith
2800 Tulane Ave.
Long Beach 15, Calif.

Koral Cavaliers
Ron Buska
670th AC&W Sq.
San Clemente Is. AFS
Long Beach 2, Calif.

Long Beach Neptunes
John Smith
P.O. Box 3424
Long Beach 3, Calif.

Sons of the Beaches
Rod Bailey
1734 Linden Ave.
Long Beach, Calif.

Subaquas
Norma Jacobson
2921 Charlemagne
Long Beach 15, Calif.

Base Ackwards International
Ed Tomaso
144 N. Norton Ave.
Los Angeles 4, Calif.

The Divin' Devils of Glendale
2773 W. Broadway
Los Angeles 41, Calif.

Fathomiers
Edward L. Gully
1449 1/2 N. Occidental Blvd.
Los Angeles 26, Calif.

Los Angeles Neptunes
Harry Keever
573 Kendall Ave.
Los Angeles, Calif.

Lung Busters
Bob Fierouon
4612 Strang St.
Los Angeles 22, Calif.

Moaga Skin Diving Club
2531 East Imperial Hwy.
Los Angeles 59, Calif.

Nisei Kelp Tangles
Skin Diving Club Inc.
Reed Sadahiro
1628 Norton Ave.
Los Angeles 18, Calif.

Sea Bears
4050 W. Slauson Ave. Apt. 5
Los Angeles 43, Calif.

Surf Raiders
Stan Mitchell
Airesearch Mfg. Co.
Los Angeles 45, Calif.

U.C.L.A. Skin Divers
James A. Craig
10490 Wilshire Blvd.
Los Angeles 24, Calif.

Underwater Photographic
Society
1147 Montecito Dr.
Los Angeles 31, Calif.

Harbs
Eugene Dyer
16290 Roseliff Lane
Los Gatos, Calif.

Madera Divers
William E. Clark
P.O. Box 293
Madera, Calif.

March AFB Skin Diving Club
Timothy L. Wood
807th Operations Sq.
Box 114, AF 1521
March AFB, Calif.

Aqua-Airdales
Stephen H. Smart
1039 Spruance Rd.
Monterey, Calif.

Sea Ducers Diving Club
Jim Anderson
1932 Crosby Ave.
Oakland, Calif.

Hollywood Reef Raiders
No. Hollywood YMCA
5142 Tijuna Ave.
No. Hollywood, Calif.

East Bay Barnacles "EBB"
Harry Hague
c/o Don's Aqua Shop
354 E. 14th St.
Oakland 6, Calif.

Oakland Eels
Jack Tees
9824 Olive St.
Oakland, Calif.

Oceanside Green Dolphins
Clyde W. Warner
Box 565
Oceanside, Calif.

Kelp Kats of Ventura County
Thomas T. Strain
252 Occidental
Oxnard, Calif.

Sea Hawks
James L. Houck
3082 Emerson St.
Palto Alto, Calif.

Star Fish of Alameda County
George A. Dutcher
Alameda County Sheriff's
Dept.
Santa Rita Rehabilitation
Center
P.O. Box 787
Pleasanton, Calif.

Shasta Neptunes
R. Paul Shepherd
1951 Jewell Lane
Redding, Calif.

Richmond Divers Club
Eugene Smithson
6241 Highland Ave.
Richmond, Calif.

Pomona Valley Skin Diving
Club
Jim Rasmussen
661 S. Parcels St.
Pomona, Calif.

Les Tortue de la Mer
Jan Goodsite
4230 Emerson
Riverside, Calif.

Sacramento Kelp Klippers
Inc.
William P. McMakin
1619 14th St.
Sacramento 14, Calif.

Salinas Sea Dippers
Louis A. Venuti
8 North 4th St.
Salinas, Calif.

Sea Sons
Bill Minor
4938 Mt. View
San Bernardino, Calif.

Aqua Club of Clairmont
Tom Tomlinson
5403 Via Carancho
San Diego 11, Calif.

Kelp Kings of San Diego
C. B. Frost
2123 Ridge View Dr.
San Diego 5, Calif.

Gulls & Buoy
Joe M. Marshall
15126 Germain St.
San Fernando, Calif.

Kelp Combos
Joseph F. Wall
12051 E. El Merrie Del Dr.
San Fernando, Calif.

Council of Underwater
Archaeology
John Huston
41 Sutter Street
San Francisco, Calif.

Fin Guards Skin Diving Club
T/Sgt. Bob L. Brown
Box 152, 6022d USAF Hosp.
APO San Francisco, Calif.

The Fuji Fins Diving Club
(N.A.S. Asteig)
Sgt. H. W. Gough Jr.
MAGS-11 (Spec. Serv.)
MAG-11 FMAW FMF PAC
c/o FPO San Francisco, Calif.

Itakusa Sea Rovers
A/c Robert Mello 21307554.
8th Field Maint. Sq. Box 187
APO 929, San Francisco, Calif.

Sea Rangers
Jack L. Helms
GM Division
USS Ranger CVA-61
c/o FPO San Francisco, Calif.

Pokey Penguins
Ferd Sahlngil
26 So. 12th St.
San Jose 12, Calif.

Cal Poly Skin Divers
Howard A. Knost
California State Polytechnic
College
San Luis Obispo, Calif.

Marin Skin Divers Club Inc.
George H. Tsageletos
1444 Fourth St.
San Rafael, Calif.

Newport Harbor
Sub-Mariners
Marjorie B. Williamson
2033 S. Birch St.
Santa Ana, Calif.

Santa Barbara Bottom
Rovers
Betty Bryson
2434 Barton Dr.
Santa Barbara, Calif.

Santa Cruz Frogmen
Dennis Fitch
203 3rd St.
Santa Cruz, Calif.

Douglas Skin Diving Club
Arnn Dervishyan
P. O. Box 874
Santa Monica, Calif.

The Santa Barbara Orcas
Oliver Andrews
465 Hillside Lane
Santa Monica, Calif.

Santa Monica Sea Lancers
Pierre Konig
103 Strand St.
Santa Monica, Calif.

Weekenders
George Brostrum
1731 Cedar St.
Santa Monica, Calif.

Sonoma County Reef
Runners
Albert Hart
1416 15th St.
Santa Rosa, Calif.

Valley Divers
1731 Riverside Dr.
Sherman Oaks, Calif.

Val Ray Divers
E. David Miner
4452 Hazeltine 4B
Sherman Oaks, Calif.

Penguins of San Gabriel
Valley
Jack E. Farley
2458 Stevens St.
So. San Gabriel, Calif.

Pacific White Sharks
c/o Fred Page St.
725 Jackpine Court
Sunnyvale, Calif.

Aqua Ghosts of So. Calif.
R. E. Gilmore
1727 W. 234th St.
Torrance, Calif.

Sharks Underwater
Adventurers
c/o Kathy Conley
4713 Bindewald Rd.
Torrance, Calif.

Makes
W. W. Johnston Jr.
6520 Sepulveda Blvd.
Van Nuys, Calif.

Cal Aquatics
Ed Benham
17208 Hemmingway
Van Nuys, Calif.

Sea Raiders
Homer Brown
1520 1/2 W. Washington Blvd.
Venice, Calif.

Sea Urchins (Women)
Kate Miller
3001 Stanford Ave.
Venice, Calif.

Women's Underwater
Spearfishing Committee
Chairman Kate Miller
3001 Stanford Ave.
Venice, Calif.

Torques
Bob Suter
5151 Alcon Ave.
Vernon, Calif.

Ebbtides
Dwayne Wilson
709 N. Hyacinth
West Covina, Calif.

Sea Combos
Ted R. Heineman
14239 E. Trumbull
Whittier, Calif.

Feather River Skin Divers
Shirley Vohoril
962 Market St.
Yuba City, Calif.

COLORADO

Hi-Lo Diving Club of
Colorado
Cliff Malmquist
3331 South Forest St.
Denver, Colo.

Mill-Hi Skin Divers
Association
Lew Funk
P. O. Box 293
Englewood, Colo.

Colorado Gypsy Divers
William R. Lemp
c/o Chancellors Trailer Court
Fountain, Colo.

CONNECTICUT

Poseidon Divers
Tom D'Ambrose
Carrington Rd.
Bethany, Conn.

Anthropo-Piscatorial
Society of Connecticut
Dr. Scott D. Isaacson
19 Harbor View Ave.
Branford, Conn.

Conn. Underwater
Diving Assn. (C.U.D.A.)
Jerome Orcutt Boys Club
c/o George Swindell
Bridgeport, Conn.

Conn. Underwater Sportsmen
Leo J. Geer
RD #4 Gardner's Lake
Colchester, Conn.

Nutmeg Diving Club
George Burt
14 Hemingway Ave.
East Haven, Conn.

Gillmen Club of Greater
Hartford YMCA
Rene Rivard
315 Pearl St.
Hartford 4, Conn.

Hartford School of Skin
Diving
George B. Kinsella
52 Barnard St.
Hartford, Conn.

Milford United Divers
Association
Earl Dugan
147 Harrison St.
Milford, Conn.

Neptune Divers
Chic O'Conner
12 Waterbury Ave.
Milford, Conn.

The New Haven Barnacles
c/o New Haven YMCA
Chapel & Howe St.
New Haven 11, Conn.

Neptune's Daughters
Barbara Jones
876 Edgewood Ave.
New Haven, Conn.

New Haven Y.M.C.A. Tritons
John Armatino
297 Dyer St.
New Haven, Conn.

Viking Skin and Scuba
Divers
Lenny Green
182 Gilbert Ave.
New Haven, Conn.

BS WORLD-WIDE ROSTER OF UNDERWATER CLUBS

The Associated Skin Divers

Paul Schmanaka
125 Reservoir Rd.
Newington, Conn.
Norwalk Skin Diving Club
Donald Lasky
c/o Norwalk YMCA
Norwalk, Conn.
Blue Fin Diving Club
Bill Huling
7 Lambert Dr.
Norwich, Conn.
Norwalk Skin Diving Club
Gladys Johnson
Wyndover Lane N.
Stamford, Conn.
Brantford Blue Fish
Ray Johnson Jr.
Holly Lane
Stoney Creek, Conn.
Norwalk Skin Diving Club
Jack Hricko, YMCA
Torrington, Conn.
Connecticut Sea Devils
631 S. Quaker Lane
West Hartford, Conn.

FLORIDA

Brooksville Sea Robbins
Charles R. McNabb
245 Oakland
Brooksville, Fla.
Sierra Scuba
c/o Sperry Microwave
Electronics Co.
P. O. Box 1828
Clearwater, Fla.
Atlas Fins
837 Kaufmann
T.D. Forrest Ave.
Cocoa, Fla.
Fernandina Beach Scuba
Divers
G.I. Hadden
Sudler Road
Fernandina Beach, Fla.
Underwater Rescue Unit
John C. Jones
1249 SW 44th Terrace
Ft. Lauderdale, Fla.
Boeing Flipper Dippers
John H. Bolden
616 Oleander Dr.
Ft. Walton Beach, Fla.
Miami Morays
Don McGee
11000 Northwest 62 Ave.
Hialeah, Fla.
Jack Jetty Jumpers, Inc.
Ozzie Park
P. O. Box 1323
Jacksonville 1, Fla.
Skipjacks Scuba Diving Club
William J. Imboden
VP-16 Box 36
Naval Air Station
Jacksonville, Fla.
The Aquajets
Richard J. Bertache
1832 Kathy Lane
Juno, Fla.
Jupiter Skin Divers
James P. White
Box 177
Jupiter, Fla.
Aqua Doc's Diving Club
Nick Wandishim HMI USN
U. S. Naval Hospital
Key West, Fla.
Miami Makos Skin Diving
Club
Pammy Flood
P. O. Box 42543
Miami, Fla.
Mola Mola International
Dick Reeves
1823 NW 6 St.
Miami 35, Fla.
University of Miami Sea
Devils
Paul McCabe
11600 SW 77th Ave.
Miami, Fla.
Water Wrigglers Club
Russ Howard
San Salvador AAFB
Patrick AFB, Fla.
USO Scuba Gobs
John W. Roberts
25 S. Spring St.
Pensacola, Fla.
Tampa Trident Club
Joe Fellicone
P. O. Box 13462
Tampa, Fla.
Palm Beach Fin Divers
H. A. Drake
732 50th St.
West Palm Beach, Fla.

GEORGIA

Albany Skin Divers
Roger Wells
931 Gordon St.
Albany, Georgia
Aqua Couples
Dr. Jack Wickham
2404 N. Decatur Rd. NE
Atlanta, Georgia

Atlanta Skin Diving Club

George Krasle
YMCA 145 Luckie St. NW
Atlanta, Georgia
Blue Angel Divers
Miss Bonnie McMahon
778 Atlantic Ave. NW
Atlanta, Ga.
Decatur Skin Divers
C. D. Agran
1130 Piedmont Ave. NE
Atlanta, Georgia
East Point Skin Divers Club
Dan E. Brisendine
1875 Brewer Blvd. S.W.
Atlanta, Georgia
Georgia Geological Divers
Bob Laxson
2294 Drew Valley Rd. NE
Atlanta, Georgia
Lockheed Skin Divers
Chris Christensen
2638 Warwick Circle NE
Atlanta, Georgia
Medico Diving Club
Vicent Matera
465 Loredans Dr. NE
Atlanta, Georgia
Senior Divers Club
Jack E. Faver
1621 Cecilia Dr. SE
Atlanta, Georgia
Snappa Diving Club
Jerry Carson
182 6th St. NW
Atlanta, Georgia
Southern-O-Divers Club
A. S. Joiner
801 State St. N.W.
Atlanta, Georgia
Bremman Carrollton
Skin Divers
Jim Healdy
330 Gordon St.
Bremen, Georgia
Brunswick Skin Divers
Jim Nunn
2911 Hunter St.
Brunswick, Georgia
Hunters Club
Acel Cook
Calhoun, Georgia
Georgia Salvage Divers
Roy Chandler
2590 Mural Drive
Chamblee, Georgia
Cumming Skin Divers Club
J. J. Hitt
Cumming, Georgia
Emory Skin Divers Club
E. J. Smyke
604 Ponce de Leon Pl.
Decatur, Georgia
International Skin Diving
& Spearfishing Assoc.
1927 Hunting Valley Dr.
Decatur, Georgia
Dublin Skin Divers Club
Harold Shepard
Route 255
Dublin, Georgia
Gainesville Skin Divers
Glenn Upton
Clarksbridge Rd.
Gainesville, Georgia
Navy-Army Skin Divers Club
Lt. W. C. Thomas
404 Varner Dr.
Marietta, Georgia
Rescue & Recovery
John Peters
4613 Merry Lane
Marietta, Georgia
Savannah YMCA
Skin Divers
Travis Strahan
108 Commonwealth Ave.
Port Wentworth, Georgia
Georgia State Marine Patrol
John Norred
Route 1, Oakdale Rd.
Smyrna, Georgia
Rome Skin Divers Club
Don T. McLaughlin
YMCA 205 E. 9th St.
Rome, Georgia
Sea Robins Skin Divers
Henry Orloff, Jr.
211 Camellia Circle
Warner Robins, Georgia
Waycross Skin Diving Club
Jack Fallin
2318 Eastover Dr.
Waycross, Georgia
Moody Aqua Gators
S/Sgt. Nels Nelson Jr.
P.O. Box 524 Moody AFB
Valdosta, Georgia

HAWAII

Puleho Club
Joe Seida
P.O. Box 375
Kaumakani, Kauai, Hawaii

IDAHO

Ideli Divers II Inc.
Rob Blackburn
814 Jefferson St.
Boise, Idaho

ILLINOIS

Illinois Valley Scuba Divers
Ronald D. Henderson
1350 North Main St.
Canton, Ill.
Aqua Raiders
Joseph Soldat
634 W. 35th St.
Chicago 16, Ill.
Aqua-Rays
Richard Williams
4 East 111 St.
Chicago 28, Ill.
The Bubbblers
William E. Peterson
5045 N. Francisco Ave.
Chicago 25, Ill.
Chicago Frogmen
Al O'Neill
444 W. 100th St.
Chicago, Ill.
Chicago Sub-Marine
Exploration Group
Dick Guerne
1641 W. Irving Park Rd.
Chicago 13, Ill.
Chicago Underwater-Seamen
Frank Bavirsha
3212 S. Green St.
Chicago 8, Ill.
Dipnoi
Richard Williams
1842 W. 39 St.
Chicago 32, Ill.
Greater Chicago Air Bubbles
Gerald G. Gill
2712 W. 59th St.
Chicago 29, Ill.
South Shore Squids
Bud Norman
1833 E. 71 St.
Chicago, Ill.
Underwater Explorers
Association
John E. Owen
5315 Drexel Ave.
Chicago 15, Ill.
Windy Fins
C. A. Michaelson
515 Wrightwood
Chicago 14, Ill.
Illinois Athletic Club
Skin Divers
Jack M. Springer
545 Hinman Ave.
Evanston, Ill.
Blue Intruders
310 Bryant Ave.
Glen Ellyn, Ill.
Aqua-Lugs
River Oaks Bath and
Tennis Club
Melrose Park, Ill.
Northwest Frogs
Don Bottari
9613 W. McLean Ave.
Melrose Park, Ill.
Aqua Pis-Cides
J. L. Fabian
5 S. Brainard
Naperville, Ill.
Depth Chargers
Jim Paclin
4232 N. Octavia Ave.
Norridge 34, Ill.
Denizens of the Deep
Bruce Martin
330 Forest Ave.
River Forest, Ill.
Greater Rockford Lung
Divers Inc.
Jack Egler
1432 Myott Ave.
Rockford, Ill.
Waukegan Diving Club Inc.
Joseph D. Styx
21 Washington Park
Waukegan, Ill.

INDIANA

Aqua-Addicts Diving Club
RR #1 Box 146
Elkhart, Ind.
Fort Wayne Diving Club
Ken Kern
302 West Superior St.
Fort Wayne, Ind.
Neptunes Nephews Inc.
Robert Hansen
3750 Ridge Rd.
Highland, Ind.
Indianapolis Aqua Divers
Rachel Bauer
4701 N. Guilford
Indianapolis, Ind.

IOWA

Atergatis Divers
John Kozek
610 East Madison
Des Moines, Iowa

KANSAS

Sunflower Aqua-Men Inc.
Edward F. Bishop
21 Highland Crest Ct.
Topeka, Kansas
Wichita Desert Divers
Gertrude Patton
2427 Martha
Wichita 3, Kansas

KENTUCKY

Mermen of Kentucky
Estill Lyons
1153 Liberty Road
Lexington, Ky.
J.C.C. Club
Davis Kling
2407 Manchester
Louisville, Ky.
Louisville Skin Diving Club
Explorer Post #315
Tom Ogle
409 Sherrin Ave.
Louisville 7, Ky.

LOUISIANA

Anchor Marine Submariners
Anchor Marine Bldg.
5550 Florida Blvd.
Baton Rouge, La.
Bajaos Skin Diving Club of
New Orleans
Burnie Dodge
740 E. Wm. David
Metairie, La.
Tritons
Joe Bautsch
229 Lake Ave.
Metairie, La.
Monroe Helldivers
Henry Melton Jr.
307 Parker St.
Monroe, La.
Diving Devils
Gerald J. LeBreto
6001 Elysian Fields
New Orleans, La.
Dixie Divers
Pat Lambert
P.O. Box 8391
New Orleans, La.

MAINE

Lewiston Auburn Divers
Assn.
P.O. Box 121
Auburn, Maine
Central Maine Kelp Bugs
c/o Joseph's Clothing Store
167 Maine St.
Fairfield, Maine
Men-of-the-Sea Diving Club
Don Lamont
P.O. Box 87
Kittery Point, Maine
The Poseidon's Underwater
Club
Bob Bissell
37 Seaview Ave.
Old Orchard Beach, Maine
Casco Bay Aqua Divers
Janice Ayer
101 Pitt St.
Portland, Maine
Devil Divers
726 Brighton Ave.
Portland, Maine
Maine Marine Alpine Club,
Inc.
Francine Thompson
70 Forest Ave.
Portland, Maine
Knox County Blue Fins
Vernon Simmons
So. Thomaston, Maine

MARYLAND

Chesapeake Mariners, Inc.
Edwin I. Carson
2615 Taney Rd.
Baltimore 9, Md.
Maryland Waterbuds, Inc.
Gordon C. Groves
Box 7184
Baltimore 18, Md.
Underwater Historical
Society of Maryland
Joseph E. Hollar Jr.
8232 Northview Rd.
Baltimore 22, Md.
Underwater Palaeonarchaeo-
logical Society of Maryland
Carl John DiJulio
104 LaPaix Lane
Baltimore 4, Md.
Lungfish
Keith R. Schreiber
310 Glenae Dr.
Catonsville 28, Md.

NSA Academy of Skin Diving

Operations Bldg.
Attn.: NSA-CWFC
Fort George G. Meade, Md.

Atlantis Rangers

7346 Forest Rd.
Hyattsville, Md.
Chesapeake Bay Skin
Diving Association
4726 Winslow Rd.
Kirby Hills, Md.

Ocean City Skin Divers

George Feehley
Sea Foam Apts., 43rd St.
Ocean City, Md.

Maryland Waterbuds Inc.

Gordon C. Groves
Box 7184
Baltimore 18, Md.
Maryland Underwater
Explorers
1704 Farragut Ave.
Rockville, Md.
Maryland Underwater
Rescue Team
13102 Evanston St.
Rockville, Md.

MASSACHUSETTS

Agawam Skin Diving Club
c/o Broz's Sport Shop
624 Springfield St.
Agawam, Mass.
Athol Frogmen
Norman R. Boyle Jr.
106 Coolidge Ave.
Athol, Mass.
Wilmington Scuba Urchins
James Metcalf
134 Rawson Rd.
Arlington 74, Mass.
Deep Sea Club
42 Water St.
Beverly, Mass.
Sandsharks Diving Club
23 Pierce Ave.
Beverly, Mass.
New England Divers
Frogman Club
Frank N. Sanger
25 Arthur St.
Beverly, Mass.
Underwater Photo Club
2 Tudor Rd.
Beverly, Mass.
Aqua Explorers Club
William Engelmann
P.O. Box 154
Boston, Mass.
Massachusetts Skin Divers
Assn.
Gilbert S. Silvestre Jr.
115 Iman St.
Cambridge 39, Mass.
Massachusetts Amphib
Louis Copley
366 Washington St.
Canton, Mass.
Essex County Frogman Club
c/o Kenneth Beck
19 Cheever St.
Danvers, Mass.
Boston Sea Rovers
Frank Scullin
413 Main St.
Everett, Mass.
Diving Belles
Lillian Luther
66 N. Summer St.
Fairhaven, Mass.
Fairhaven Whalers
Brad Luther Jr.
66 N. Summer St.
Fairhaven, Mass.
Fall River Aquamen
Ted Piacard
64 Chavensen St.
Fall River, Mass.
Skin Diving Whalers
Edward B. McConnell
P.O. Box 1885
Fall River, Mass.
Fitchburg Skin Divers Club
Clifford Dunn Jr.
Falahub Rd.
Fitchburg, Mass.
Leominster C. D. Rescue
Divers
Harold Farnsworth
22 Crocker Ave., Whalon
Fitchburg, Mass.
Gardner Skin Divers
Emile Cormier
36 Birch St.
Gardner, Mass.
Cape Ann Divers
Paul T. Harling
482 Washington St.
Gloster, Mass.
Greenfield YMCA
Amphibians
Carl H. White
451 Main St.
Greenfield, Mass.

(Continued)

WORLD-WIDE ROSTER OF UNDERWATER CLUBS

South Shore Neptunes, Inc.
P.O. Box 316
Hobbrook, Mass.

South Shore Sea Serpents
Russ Bishop
P.O. Box 8
Hobbrook, Mass.

Worcester County Spearfishermen
Edward Logan
37 Holt Rd.
Holden, Mass.

Framingham Sea Urchins
774 Winter St.
Holliston, Mass.

South Shore Tautogs
Randall Ryan
19 Packard Ave.
Hull, Mass.

Hyannis Cape Cods
P.O. Box 151
Hyannis, Mass.

Lowell Underwater Explorers
Henry Couture
10 Robert Place
Lowell, Mass.

Massachusetts Makes
c/o Ludlow Boys Club
Chestnut Street
Needham, Mass.

Neptunians of Great Lynn
Francis Gallant
42 Baker St.
Lynn, Mass.

Northshore Frogmen Club, Inc.
18 Lovell Rd.
Lynnfield, Mass.

Middlesex Divers
Paul Grant
Pleasant St. YMCA
Malden, Mass.

Northeast Cine Divers
Paul Hennessey
793 Lynn Fells Parkway
Melrose, Mass.

Semi Panic Club
P.O. Box 171
Middleboro, Mass.

Framingham Sea Urchins
Stephen K. Flanders
67 Everett St.
Natick, Mass.

Needham Tridentals
Laurie Penney
349 Warren St.
Needham 92, Mass.

South Shore Skin Diving Club
Lois Spear
184 Standish Rd.
No. Quincy, Mass.

Otis Fathomeers
Clord T. Dunn
Box 2255
962 AFW & Conron
Otis AFB, Mass.

Neptune's Angels
4 Lewis Place
Roxbury, Mass.

New England Divers Frogmen
Charles J. Crean
100 Federal St.
Salem, Mass.

Somerset Aquamasters
49 Adams St.
Somerset, Mass.

Southbridge Skin Divers Club
33 Plimpton St.
Southbridge, Mass.

Mass. Sea Lions
Pat Baldasaro
P.O. Box 1506
Springfield 1, Mass.

The Mermen Club
Frank Quinn
97 Thompson St.
Springfield, Mass.

Bay State Aqua Club Inc.
Gerald F. Comeau
6 Minot St.
Stoneham 80, Mass.

Taunton Diving Association
W. A. Burton
103 Summer St.
Taunton, Mass.

Vineyard Vikings Diving Club
Arnold Carr
Vineyard Haven, Mass.

Under Sea Exploration & Salvage Team
Henry Nilan
61 Dent St.
West Roxbury, Mass.

Yankee Flippers
West Roxbury YMCA
15 Bellevue St.
West Roxbury, Mass.

New England Scuba Divers
James L. Fickett
356 Beulah St.
Whitman, Mass.

New England Albacores
P.O. Box 45
Winthrop 52, Mass.

Toy Town Tadpoles
John Walker
19 Chestnut St.
Winchendon, Mass.

Worcester Frogmen, Inc.
275 1/2 Lake Ave.
Worcester, Mass.

MICHIGAN

Battle Creek Aqua Club
Kenneth Mayo
320 Miller Ave.
Battle Creek, Mich.

Junior Skin Divers
Michael Misner
193 Laurel Dr.
Battle Creek, Mich.

Twin City Aqua Fins
Mrs. R. David Lewis
400 Parker Ave.
Benton Harbor, Mich.

Dolphin Diving Club of Detroit
14961 Oakfield
Detroit 27, Mich.

Gasco Scuba Divers
415 Clifford St.
Detroit 26, Mich.

Michigan Water Scorpion Club
28 W. Warren
Detroit 1, Mich.

Tadpoles of Detroit
Gilbert W. Kerr
12731 Hayes St.
Detroit 5, Mich.

Flint Finmen
Roy Pearce
2437 Stockbridge
Flint 6, Mich.

Y.M.C.A. Cuadro Pescadores
Edmund J. Taylor
1262 W. Coldwater Rd.
Flint 5, Mich.

Aquatic Explorers Club
220 E. Hughitt St.
Iron Mountain, Mich.

Inland Aqua Divers
S. Douglas Gramling
115 W. Monroe St.
Jackson, Mich.

Michigan Underwater Salvage
Thomas McInnis
7390 Kenilworth Dr.
Lambertville, Mich.

Bluefin Divers
George Brecko
923 LeBlanc
Lincoln Park, Mich.

Marshall Sea Wolves
Rt. #1, Stuart Lake
Marshall, Mich.

Blue Water Fathom Finders
Box 122
Marquette, Mich.

Midland Skin Divers
John A. Hughes
4555 Flajole Rd.
Midland, Mich.

Lake Snappers of Mt. Clemens
Phyllis Kuezyinski
109 Welts
Mt. Clemens, Mich.

Ann Arbor Amphibians
Jean Crittenden
11259 Mumford Dr.
Portage Lake Rd #2
Pinckney, Mich.

Viking Diving Club
Joe Kelly
12449 Agnes
Southgate, Mich.

The Ford Sea Horses Diving Club
Eddie M. Murphy
3800 N. Longmeadow
Trenton, Mich.

The Utica Scuba Divers
R. B. Sylvester
47780 Ryan Rd.
Utica, Mich.

Seaway Scuba Divers
Ken Brooklouse
1817 Sycamore St.
Wyandotte, Mich.

MINNESOTA

Duluth Divers Club
Lee Herring
Box 141
Duluth, Minn.

Aqua Otters
Dick Enstad
615 West Vasa
Fergus Falls, Minn.

Minnesota Skin Divers Club
Robert Travis Keagle
16809 N. Scenic Lane
Hopkins, Minn.

The Minneapolis Mariners Diving Club
Tom Koski
12708 Waysata Blvd.
Minneapolis 26, Minn.

Minnesota Frogmen Inc.
Thomas Kayser
520 Jewelers Exchange Bldg.
627 First Avenue N.
Minneapolis 3, Minn.

MISSISSIPPI Fin Twisters
Neil Rae Dobbs
CMR 1 Box 2634
Keesler AFB
Biloxi, Miss.

Mississippi Gulf Coast Menfish
George Schloegel
Gulfport, Miss.

MISSOURI

Kansas City Frogmen Club, Inc.
Betty Froust
404 East 10th St.
Downtown YMCA
Kansas City, Mo.

The Seaway Saboteurs
Bill Beasley
24 Deer Creek Woods
Ladue 24, Mo.

Aqua Lugs
John H. Holekamp
2829 Eastmoor Dr.
Springfield, Mo.

Aquateers
Bud Ackermann
4207 Humphrey St.
St. Louis 16, Mo.

Deep Six Plus
Carondelet YMCA
600 Loughborough Ave.
St. Louis 11, Mo.

Lung Rangers
c/o Northside YMCA
3100 N. Grand
St. Louis, Mo.

St. Louis Scuba Divers Club
Cleon Biter
Downtown YMCA
1528 Locust St.
St. Louis, Mo.

St. Louis Underwater Recovery Team
Paul E. Laws
116 Barton St.
St. Louis 4, Mo.

MONTANA

Conrad Skin Divers
James Armstrong
Conrad, Montana

Great Falls Scuba Divers
James S. Feiden
R 1 W, Box 400
Great Falls, Mont.

NEVADA

Hacienda Skin Divers of Las Vegas
F. J. Combel Jr.
2915 Decatur
Las Vegas, Nev.

Whamco Divers Scuba Club
Mike Hernandez
625 No. 23rd St.
Las Vegas, Nev.

Nevada Desert Divers
Loring Persagehl
2300 Prater Way
Sparks, Nev.

NEW HAMPSHIRE

New Hampshire Sea Skates
Jack Whelan
24 Seabee St.
Bedford, N. H.

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Weirs Blvd., Rd #3
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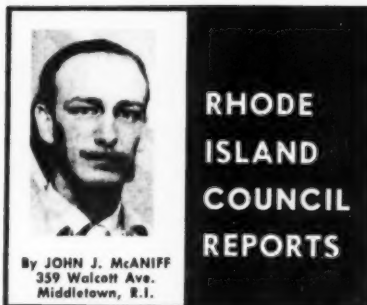
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RHODE ISLAND COUNCIL REPORTS

By JOHN J. McANIFF
359 Walcott Ave.
Middletown, R.I.

Plans are already in the works this year
for the Rhode Island Council of Skin Div-
ing Clubs, Inc., and its member clubs to
participate in the year's most outstanding
event in the sports world in this area;
the Annual Sportsman's Show. Under the
sponsorship of the Federated Sports Clubs
of Rhode Island, this is expected to be an
even larger and more successful show than
ever before. The Council expects to tie in
with a huge display depicting the extent
of the sport of skin diving here in Rhode
Island as well as practical demonstrations
of the equipment and techniques used in
our waters.

All of our clubs are looking forward to
the coming spearfishing season and the
first year of competitive skin diving under
the direction of the Underwater Society
of America. We have all pledged our full
support to Del Wren, the Society's Vice-
President of Competitive Skin Diving, and
will work with him to make this a most
successful year in the sport.

In addition to our spearfishing compe-
titions, it is expected that the Council will
launch at least two other major projects
this year. Our ways and means committee,
consisting of Vice-President Walt Blak-
inton of the R. I. Underwater Spearfisher-
men, Ray Perrotta of the Little Rhody
Divers, Don Bibeau of the Narragansett
Spearfishermen and Joe Sanocki of the
Rhode Island Divers, is now working on
a series of possibilities to improve the
treasury status without drawing upon the
individual clubs.

The Council is watching the progress of
an attempt to form a marine archaeological
museum in the state with interest. The ef-
forts in this direction were started last
October and some progress has been shown
to date.

With the spring diving season almost
upon us it is more important than ever
that we recognize how fortunate we here
in Rhode Island are to have one of the
finest diving areas of the country. With
its hard rocky shores and moderate water
temperature over the greater part of the
year, our ocean front is very abundant and
surprisingly beautiful with an abundance
of fish and marine growth. With all this
in mind we must also recognize that many
others are aware of our state's attractions.
In past years there have been a series of
incidents involving other sportsmen with
skin divers in situations which have been
anything but good for the public relations
of our sport. In nearly every instance the
people involved have not been from orga-
nized clubs either in or out of the state but
rather individuals without the guidance and
instruction necessary to good sportsman-

1959 BOUND VOLUME

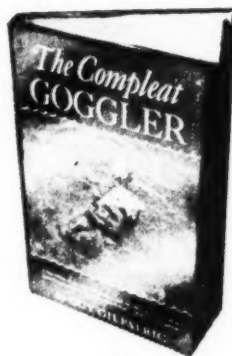
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ship. We, the members of the Council's clubs, are doing all in our power to build up the reputation and recognition of the sport in the minds of other sportsmen but we cannot control the actions of others. This is an open appeal to all divers who may visit our little state. We welcome you one and all in the interest of good sportsmanship, but please remember the age old adage: "Do unto others as you would have them do unto you."

One late news item indicates that one of the Council clubs has a photographic project in mind for early spring. This club plans to do an underwater movie depicting some of the club activities, so that they may use it the following fall and winter in a campaign to indoctrinate much of the public into the interests of the sport through the various service clubs and other organizations. If successful, this project should do wonders in letting the public know what the sport is really like.

Till next month, good luck and good diving. . . .

California . . .

Kelptomaniacs—Los Angeles—Reporter Roy Salls—A new year is here and we have many pleasant memories of the one past. Our members dived from San Jose, Calif., to Guaymas, Mexico, during the year. We are one of the older clubs starting at about the same time as "Skin Diver Magazine." Our members have 10 to 15 years diving experience. Cliff Dietsch, our club recorder for 1960, is a hard hat diver with experience at the oil rigs in the Gulf of Mexico. We have a closed membership of 15 men. At the present we have openings for three divers. Our requirements are high but all the members are divers (in all kinds of weather). The thing that is different about our club is that we enjoy diving as a sport and not as a wholesale slaughter of fish. We wish that the A.A.U. would change the point system in the championship meets to a more sensible type of contest. They went a long way towards this goal in the fall meet.

I would like to thank Mr. Sheley of the San Jose Skin Diver Shop for showing this reporter a wonderful day of diving in the Santa Cruz area (boy those 10 inch abs!). The advertisers in this magazine are tops in my book after the above experience. The members of the Kelptomaniacs that received tickets to the fabulous Underwater Film Festival would like to thank Mr. Kenny, president of the Los Angeles Neptunes, for taking his time to get us tickets.

Anyone wishing to contact us write P.O. Box 3441, Van Nuys, Calif.

North Hollywood Reef Raiders—Reporter John Rander—Our club has recently been formed and we have a few openings for new members. The club is sponsored by the Y.M.C.A. and is for high school students (boys). Any interested persons should contact our vice-president, John Rander, at 11401 Oxnard, North Hollywood, PO 1-2973, or the North Hollywood Y.M.C.A.

California Marine Aquarists—Reporter Craig Backhus—You should see what they are giving away as door prizes lately! Things like tropical butterfly fish, giant sea-horses and a manta shrimp. This last item mentioned is one of the most interesting creatures of the sea. However, they are just as rare as they are beautiful. Divers

(Continued Next Page)

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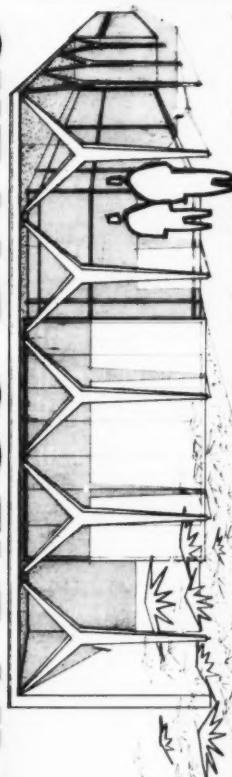
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CALIFORNIA (Continued)

coming across them have found out some of their special characteristics, such as lashing out with special knife like legs and slicing the diver's hand five or six times before he could drop it! When they are inside an aquarium all is peaceful except for an occasional nerve-shattering crack as they flex their knuckles, that sounds for the world like the front of your aquarium is coming apart at the seams. By the way, this peculiar specimen was donated for the door prize by one of our member divers, Frank Rutherford, who lives on Catalina Island. Frank teaches and dives. I don't know in which order he excels, but as far as being a diver-collector he takes top honors.

Speaking of top honors, Jack McNeal, winner of the majority of the 35mm picture awards at the 1958 Underwater Film Festival, was at our last meeting. He showed his own evolution of underwater excellence. His first pictures seemed good by my standards, but he tore them apart as being too far away from the subject for one thing, poor lighting, etc. He solved this problem by special lens and flash then moved in so close that his award winning picture was completely filled with the subject. The result—beautiful!

By the way, those low tides are here again! Thus the strange sight of bottles, dip nets, and our assorted soggy feet will be seen along our rocky beaches in search of all the various organisms available at this time. This will be a time swapping of Bat Stars for Cling Fish and different types of plants for something else of equal value. If any of you would like to test your sharp eyes and perseverance contact our president, Jerry Fawcett, WE 4-2734 (after six).

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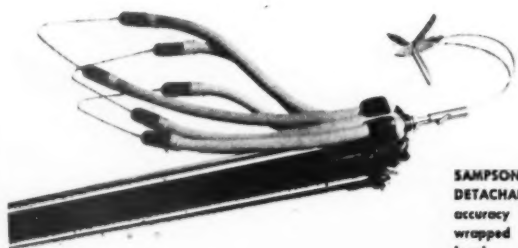
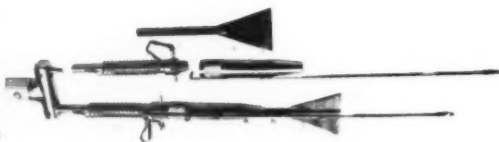
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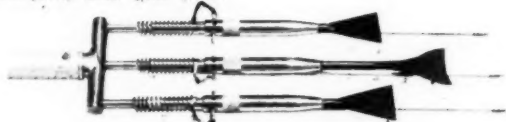
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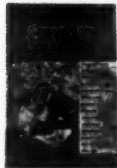
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Not since the Boston Convention have I seen such a display of solidarity as was demonstrated at the last council meeting. The Underwater Fishermen of N.J. were presenting their ten-point legislative proposal to those club representatives who attended.

Point after point was discussed, evaluated, rewritten, and resolved, right down the line. The splendid display of cooperation was inspiring to say the least.

And then the bomb fell.

From this point on, a casual observer walking into December's meeting might well have thought he walked in on a major courtroom trial. Representatives from all over the state took on the appearance of prosecuting and defense attorneys during bitter cross-examination over points number seven and eight. For the benefit of the reader these two points follow: 7. That regulations pertaining to sale of spearguns and speargun safety courses be established similar to those existing for gun and bow hunters (Permit for use of gun). 8. That

spearfishing with scuba in fresh water be prohibited within 1/2 mile from shore.

Advanced forecasts indicated that much resistance could be expected on point seven. However, it seemed that no one gave a second thought to point eight, which turned out to be a real "sleeper." For those in favor of point eight the resistance seemed almost unbelievable. For those opposed to it, they expressed shock at its even being presented. Principal argument on the pro side—sportsmanship and relations with fishermen. Principal argument on the con side—the beginners at the sport. Cal Smith and Sam Watson, both of whom represented the Underwater Fishermen, had the unenviable task of presenting the proposals. They were, unintentionally I am sure, prime targets during the discussion.

Forty-nine divers representing 18 clubs and two councils attended. The Middle Atlantic Underwater Council was quite ably represented by Dan Fisher and Bob Border. Individual clubs are now going over the proposals and will report back on January 25.

In preparation to setting up a statewide scuba course, the council sends an open request for outlines of courses which are now being used. Each course is unique in itself. If you think yours can help us we would like to hear from you. The council is open to any suggestions you might have.

The council is dropping its equipment serial number registration system. Reason... it got too confusing for me... nobody answered.

A Civil Defense unit in Lakewood called the "Heavy Duty Rescue and Underwater Recovery Unit" is well on its way to being one of the top C.D. units in the state. The group is headed by Crew Chief Bob Shenkin with invaluable assistance from

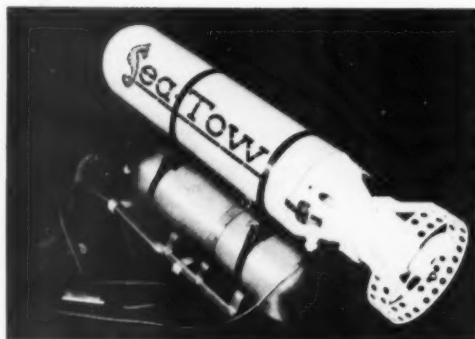
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When it comes to giving scuba courses the N.J. Skin Diving Club is the one to watch. The group starts its fifth course on March 29. The course lasts for 10 weeks. "Y" members pay \$10 and non-members \$20, this includes textbook, 10 sessions for 20 hours. Membership is limited to 20. The course is given at the Montclair YMCA, 25 Park St. PI 4-3400. This group announces their Fourth Annual Dinner and Dance to be held March 12 at the Friar Tuck Inn, Cedar Grove, N.J. All member clubs in the Council are invited to attend. For tickets write to Barbara Kidder, Longhill Road 8D, Great Notch, N.J.

This year's blooper award just has to go to Jersey Coast Frogmen member Bob McKenna. He went to see the film "The Silent World" at the last club meeting. Nothing unusual about that, except it was his wedding night! Said Bob, "I wouldn't miss this film for anything."

New Jersey Underwater Sportsmen—Orange—Reporter John W. Mikelson—The club's Annual Stag Dinner was held on November 17th. New officers were elected: Ed Strauss, president; George Sutton, vice-president; Vic Komaromy, treasurer (re-elected), and John Mikelson, secretary. The highlight of 1959 was the club's weekend trip to Narragansett, R. I. The weatherman could not have been more cooperative. As a result, spearfishing for blackfish and striped bass was exceptionally good.

Herman Prinz won top honor this season with his 51 lb. striped bass and Ed Strauss was named scuba diver of the year.

The New Jersey Underwater Sportsmen are affiliated with the Central Branch Y.M.C.A., 125 Main Street, East Orange, New Jersey. Meetings are held every Tuesday evening at 7:30.

Oklahoma . . .

Bluegill Divers — Oklahoma City — Reporter Lewis A. Mason—The Bluegills Diving Club of Oklahoma City awarded a trophy to Oklahoma's Diver of The Year for 1959 at their annual banquet held at the Central YMCA in Oklahoma City. The master of ceremonies was Dr. E. E. Shircliff. The speaker was Dr. James R. Snider, and Lewis A. (Chick) Mason awarded the trophy. Dr. Snider served in the Navy as a member of the Navy Experimental Diving Unit and as Diving Medical Officer. The trophy was awarded to a man whose name has been synonymous with diving for a number of years. He is a qualified underwater mechanic, rated such by the U.S. Navy. He is a certified diving instructor. He is the one man responsible for the beginning of skin and scuba diving in the state of Oklahoma. He is responsible for the saving of two lives this year while diving. We feel that it is appropriate that the man that started diving in Oklahoma, be the first man to receive Oklahoma's Diver of The Year Award. We proudly announce the selection of Phillip Bayouth as Oklahoma's Diver of The Year for 1959.

Fifteen of the Bluegills joined the Tulsa Divers in an underwater search of the Arkansas River for the body of a teenage boy. The body was not found. Free air was furnished all divers by Louis Mutz, J. J. Price, Alan Judkins, and Bill Graham of the Bluegills.

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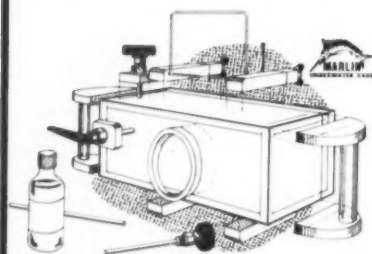
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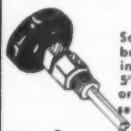
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**P. O. Box 42543
Miami, Florida**

University of Miami Sea Devils Paul McCabe and Scott Roberts give us the following report of their latest holiday trip to the islands:

University of Miami Sea Devils by Paul McCabe and Scott Roberts — The second annual Sea Devils Spearfishing Contest got underway in October. The contest is intracub and run on the point system.

Last year's winning fish was a 56 lb. grouper shot by Bill Bossert. This year Walt Dineen leads with a 54 lb. grouper. At the last meeting of the current school year, May 25, 1960, the Zodiac Sea Wolf underwater watch will be awarded to the contestant holding the largest number of points. Trophies will be presented also for runner-up, and for the largest fish in each of the five categories—grouper, jack, snapper, hog-fish, and barracuda.

Over the Thanksgiving holiday, 18 of the Sea Devils left their usual diving areas among the reefs off the lower Florida Keys for the waters south of Bimini. Two boats were chartered for the trip. Eight members went aboard the "Blue Goose", a 70' schooner skippered by Thomas Burnett, formerly of UDT. The other ten went on the "Tranquilla", a 40' cabin cruiser skippered by Sandy Wilburn. Since strong headwinds necessitated depending upon the auxiliary engine only on the "Blue Goose", it left Miami Thursday evening, ten hours before the "Tranquilla". High seas delayed both boats' arrival until Friday evening, precluding any diving on that day.

Saturday the weather was worse, but both boats went out. Spearfishing was poor due to the unusually poor visibility and the ap-

parent lack of big fish. A few groupers ten to fifteen pounds each were taken as a last resort. When the sky grew ominously darker and the wind picked up more, the "Tranquilla" retreated back to Bimini.

Because the draft of the "Blue Goose" exceeded the depth of the channel into the harbor at Bimini, the schooner was forced to lay over in Gun Cay anchorage about ten miles to the south. That night the anchor pulled loose and then took hold again—even in the relative calm of the anchorage there was a strong current and wind. Ironically almost the same thing happened on the same night to her sister-ship, the schooner "Yankee Girl", which was anchored off the western shore of Alice Town, Bimini. The shackle on the anchor broke, and before anything could be done the schooner was aground and breaking up on the reef just off shore. Luckily everyone got ashore safely. During the remainder of the night the heavy surf drove the vessel off the reef and onto the shore. The Sea Devils from the "Tranquilla" spent most of the next day helping the captain to salvage everything that was removable from the wreck.

Sunday was not so eventful aboard the "Blue Goose". Everyone had to stay aboard in case the ground tackle failed, necessitating an immediate return to Miami. That night sharks were lured to the side. A nine foot hammerhead took five from spears in his back... and then swam off...

Monday morning the Sea Devils in Bimini returned through the courtesy of Captain Keyes of Keyes Real Estate in Miami aboard his cruiser "Caprice". It, being a much larger boat than the "Tranquilla," was able to make the crossing comfortably and arrive in Miami that evening. Since the seas had calmed a bit and the wind had diminished, there was less to restrain the more adventuresome of those stranded on the "Blue Goose" from leaving the boat while waiting for more comfortable conditions for the voyage home. Three Sea Devils swam to Gun Cay, explored the lighthouse, the several other buildings and most of the island (all uninhabited) and decided it would be a good place to establish headquarters on some future trip. They returned in several hours with six octopi—for supper.

That night the "Blue Goose" sailed back to Miami without incident, arriving at 6 Tuesday morning. Our trip was somewhat unproductive as far as diving is concerned, but we look forward to many more.

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CONNECTICUT COUNCIL OF DIVING CLUBS

LEONARD GREEN
P. O. Box 1446
New Haven, Conn.

The Connecticut Council of Diving Clubs, following through with its purpose of promoting safe diving practice, recently put into action a unique plan, certification of skin and scuba diving instructors. Under the certification plan Council members desiring to obtain instructors' tickets are given a stiff four hour exam. The exam is both written and oral and is given by Chief Torpedoman Robert Canary, a certified scuba instructor at the New London Submarine Base training tower.

On November 23, four instructors took the exhausting exam and of the four only two passed. The two men winning their tickets were Arnaldo Cusano of the New Haven Barnacles and Paul Tzimoulis of the New Haven Tritons. The certification is voluntary and is not required by the Connecticut Council or the State of Connecticut.

Connecticut Sea Devils—Hartford — On Friday, December 4 the Connecticut Sea Devils held their annual Christmas dinner dance at the Garden Grove Caterers in Manchester, Conn. The bill of fare included a full course dinner and an evening of dancing to one of Hartford's more popular orchestras.

The Connecticut Council of Diving Club awards were presented during the evening,

as the Council dinner dance was cancelled this year.

New Haven Tritons—On Thursday December 3 a crowd of about 300 people turned out at the New Haven Y.M.C.A. auditorium to hear a lecture by Lt. Lucas Van Orden USNMCR who is connected with Submarine Medical Research Laboratory at the New London Submarine Base, Groton, Connecticut.—Lt. Van Orden talked on the new USN submarine escape methods.

Highlights of the evening were color films on the recent world record 300 ft. submarine escape of Commander Bond and recent tests of underwater escapes from jet aircraft cockpits. Also films were shown on buoyant ascents in which the lieutenant took part. The lecture was sponsored by the New Haven Y.M.C.A. Tritons.

Connecticut Sea Devils—Hartford—The Connecticut Sea Devils elected the following officers: Jim Jacobs, president; Art Santos, vice-president; Fred Lichatz, treasurer; Hugh Montgomery, corresponding secretary, and Anthony Cassano, recording secretary.

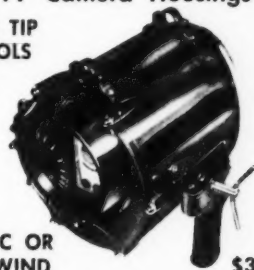
Our annual dinner-dance held on December 4th drew 64 guests and members. The representatives of the following clubs attended: Associated Skin Divers, Meriden Sea Lancers, Norwescon Divers, Conn. Dolphins, and the Viking Divers. Connecticut Council awards were also given at the Sea Devils dance by Trooper Farrell of the Connecticut State Police. The Sea Devils walked off with three out of four first place spearfishing awards (two to Fred Lichatz and one to Ed Jacobs), and Fred Lichatz won the Spearfisherman of the year honors.

Will Jacobs, of our club, was re-elected to his third consecutive term as president of the 32 clubs in the Connecticut Council. Will also was elected vice-president of the Underwater Society of America.

Our next event was the annual New Year's day dive at Napatree Point, Rhode Island. This is the best cure we know of for the after effects of New Year's eve. Joe Pallotti and Ed Jacobs walked off with the club awards for spearfishing in 1959, but next year they are in for stiff competition from Fred Lichatz, Paul Boy (training every day) and a 'mystery member' who has new theories on how to revolutionize spearfishing.

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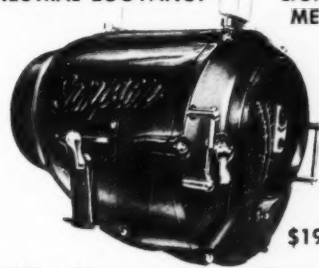
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ATLANTIC SKIN DIVING COUNCIL



By C. K. "RUSTY" SHERRILL

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Arlington 6, Virginia

The expected slowdown of diving activities due to the arrival of winter has not materialized. The enthusiasm and projects of the affiliated clubs and their members are apparently perpetual. Members are sharpening their axes and repairing dry suits with great expectations for the first big freeze of the year.

The Atlantic Skin Diving Council's New Year's Dance was warmly received and attendance exceeded all expectations. A vote of thanks to our President, Van Buskirk, who did an excellent job in arranging this affair.

On the new club scene we would like to extend a warm welcome to the Fathoms Skin Diving Club of Fayetteville, North Carolina. This excellent club headed by President John DeCarter, Vice-president Ralph Drouin and Secretary Shirley DeCarter is indeed a welcome addition. Members in the North Carolina area desiring diving information may contact them by writing to 104 Tammy Street, Fayetteville, N.C.

Another welcome addition in the metropolitan area is the Explorer Skin Diving Club headed by Barry Scheiner and Arthur Grossman. This group may be reached by writing to 510 Rittenhouse Street, N.W., Washington, D.C.

A vote of thanks is given to Connie O'Brien of the Public Relations Committee who did an outstanding job in establishing the Council Newsletter.

Members are urged to attend the Special General Meeting being held in March at 1515 L Street, N.W., Washington, D.C. to amend the Council Constitution, so as to permit the Council to establish regional areas which will result in better service and more benefits to outlying affiliated clubs.

Annandale Skin Diving Club by Robert Coar—In the early part of 1959 five persons met to form this club. While laboring to establish the club, they heard of the Atlantic Skin Diving Council. After affiliation a 20-hour training course was made available to them and prospective new members. By August 17 divers had acquired their basic equipment and graduated from the Council Training Course. Since this time the club has increased to 31 members and is one of the most active in the area.

Fathoms Skin Diving Club by Shirley L. DeCarter—During the past summer the club has taken various trips to South Port, North Carolina, on the Carolina coast and made numerous fresh water dives in White Lake. At the November meeting the Fathoms Underwater Rescue Team was organized as a public service to Fayetteville and Cumberland counties in North Carolina. Recently John DeCarter, Ralph Drouin and Ronald L. Olson assisted local police and fire departments in recovering a stolen car from Cape Fear River.

Aquanauts by Neal Upchurch—Since the summer of 1959 the Aquanauts have placed more emphasis on science than on sport. They are presently engaged in cave diving projects which are intended to expand the geological and speleological investigation of caves in Maryland, Virginia and West Virginia. Anyone who has an interest in these projects would certainly be welcomed and may drop a card to the club at 2131 Massachusetts Avenue, N.W., Washington, D.C.

Chesapeake Bay Skin Diving Association by Pat Freeman—The Halloween Masquerade Party at the House of Seafood on Naylor Road was enjoyed by members of CBSA. Two prizes were awarded to the best original male and female costumes. At the last meeting Tommy Pharris was appointed as delegate to the Council and Carter Cafritz was appointed as alternate.

A cordial invitation is extended to any clubs desiring to avail themselves of the benefits that can be derived from Council membership. For complete information drop a card to the Council reporter.

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MONSTER OF TUMACH

(Continued from Page 32)

There was absolutely no sign of a monster of any kind. When we surfaced and told our story to the Indian he was very quiet and quite anxious to move on. We made one more dive and checked everything in detail then left for a small bay further down the coast. A short dive was made for enough crabs for supper and then we put the gear away for some salmon trolling before turning in.

The trip home was uneventful until we reached the Indian Village where we were asked to dive for a fishing rod which the councilor's son had lost. He said he had marked the spot carefully, and rushed out to show us. The catch was that he had marked the rail of one of the fishing boats which had since left so we didn't have much luck.

There is a strange sequel to this story which some of the older Indians nod at wisely. One evening a couple of months later I received a call from the Royal Canadian Mounted Police. They asked if I would make an underwater search for a missing boy. I called Carl and we were ready quickly and drove to the dock. A boat took us over and we started our routine, square search in about thirty-five to forty feet of water. On our second leg we found the boy. He had apparently fallen in while setting or retrieving a crab net. He was quite small and had not been able to swim.

This boy was the son of the Indian councilor who had taken us to the monster's cave of Tumach. So who knows? ➤

Mexico . . .

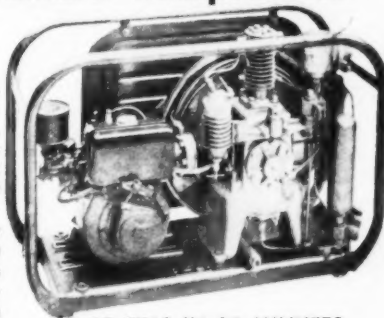
Club de Buco "Y"—Mexico D.F.—Reporter Carlos Fernandez V.—Our club has recently been organized and we have 15 members. Only members of the Y.M.C.A. can belong to this club and in order to be accepted they have to prove their capacity and show experience in diving up to 120' in open sea or take the diving course at the Y.M.C.A. with success. This includes diving in the sea at 19 meters.

The club welcomes any skin diver that wants to get information about diving in Mexico or other pertinent information in connection with the skin diving in our country. Two courses per year have been established and we expect that more people will enroll in our club after finishing the courses and training. ➤

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ICey NEWS

Illinois Council of
Skin and Scuba
Divers Inc.

By A. L. ANDERSON
Lawen Y.M.C.A.
30 W. Chicago Ave.
Chicago 10, Ill.



The Air Stations Listing has at long last been compiled and published. This six-state 85-station roster will be bolstered by regularly issued supplements throughout the year. The Council has come up with another service, too, dispensing incorporation not-for-profit forms to all member clubs for consideration.

By the end of February, Logan La Chance will have announced dates for the 1960 IC sponsored SSD competitions.

The Council now has an official address for all general correspondence. Address: Illinois Council of Skin and Scuba Divers, Inc. Room 2300, Board of Trade Bldg., 141 W. Jackson Blvd., Chicago 4, Illinois.

Metropolitan Chicago "Y" SSD clubs don't spring up as quickly and easily as others appear to do. Since the inception of the "Y" Council in 1957, the list of clubs has grown from seven to twelve.

AFTER LO, THESE MANY YEARS

Dan Wagner is now recognized as a professional diver, the word has come down from the Executive Committee of the Metropolitan Chicago YMCA Sports Council. The comical feature is that Dan personally confessed his professionalism directly to the committee in question. You could hear Dan's yell for miles around when he learned this information.

CLARIFICATION

"The YMCA certified instructor must teach at least one 32-hour authorized SSD course per year, to keep his certification good," says Monte Topel, Secretary related to SSD for the MC-Y. This requirement pertains especially to those divers who pass the "Y" instructors' certification course but do their instructing outside of the YMCA. It is conjectured that the way this will work out, the instructor will pursue his own prescribed course and once annually, announce and follow through the YMCA prescribed 32-hour course which will likely be open to observation by "Y" authorities. Failure to conduct one such course per year and to comply with its requirements results in the "Y" instructor's card being yanked.

Triple R Scuba Team—Reporter Jack Sharp—The name of the club may be new but our boys have been diving right along. Eight of our twenty-nine members work on the local URT. This New Year's Day dive was the third annual rite which this time was done in company with Los Pobres Pescadores. Now bring on that banquet!

Los Pobres Pescadores—Reporter Ray Hoglund—We could as easily have called ourselves the four musketeers—(scubateers already in use!) Although our meetings are only to dive, any time one of us gets invited to any other club's doings, we go in a body and in this manner achieve the complete "club" life.

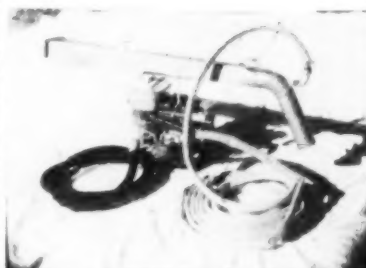
Our New Year's Day dive was a joint operation, at Lake Geneva, with the Triple R Scuba Team and the Motorola Spear and Fin Club. Although we saw a few fish, without either inclination or spear guns, we left Lake Geneva's finny citizens alone to enjoy the holiday with us.

Atlantis Divers — Reporter Phil Alex — The photo-banquet committee is being co-chaired by Harry Lockey, Ken Miller, and Arthur P. Swanson. Although the event isn't until April, the groundwork has been laid already for a big affair at West Suburban "Y" on behalf of the Metropolitan Chicago YMCA Skin and Scuba Diving Clubs.

Chicago Frogmen—Reporter Al O'Neil — During the coming season we will be using the "Little Audrey"—Port Washing-

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ton ahoy! Yours truly has gone commercial and am local representative for Sportsway, also club secretary.

Twenty Fathom Club — Reporter Ed Marek — With the new year, we not only have a wholly new constitution, but are all set to incorporate within the month. Many thanks to Norm Ramsden without whose help it is problematic as to when we would have achieved this surprisingly monumental task.

The club wishes Bob Hicks the best of luck in his promotion, even though this removes Bob to Newark N. J. And Derek Crisp has gone back to England, Charlotte "Charley" Brown down diving in the Keys again.

Motorola Spear and Fin Club—Reporter Bud Nemic—On December 12 we participated in the Motorola Fair. Some of our members dressed in their wet suits, even wearing tanks and weight belts!—mingled with the crowd. In February, our Class No. 2 will have its checkout dive at Lake Geneva. Underwater communications developed in the Friday Night Work Shop will receive open water testing at this time.

Note: Bell & Gosset, well-known Chicago land plant, has instituted a SSD course for its personnel. Reports are that other industrial plants are looking with favor on installing SSD courses. Perhaps that dream of a Chicago underwater league may be reality by summer.

Harvey Orcas—This club features year round diving, and is open for new members. Instruction is available at Harvey Memorial YMCA.

The Compleat Gogglers will be in the Bahamas for February, the Scubateers are going in June. It looks like quite a few clubs are getting the travel bug.

Montana . . .

Scuba Divers Club — Great Falls — Reporter Daniel T. Henke—We believe that we are the first or one of the first clubs so organized and sanctioned by a college. Any information on this would be most welcome.

We are now participating in a training program which will familiarize all the members with skin diving, the equipment used, and the safety requirements necessary for the sport. The Club would appreciate very much any methods suggested by your readers regarding the fulfillment of this program.

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No longer will the wife complain about the beach living. Double your diving time with the Dreamer.



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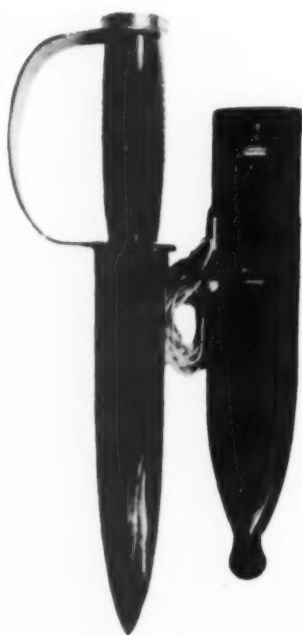
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MASSACHUSETTS COUNCIL OF DIVING CLUBS, INC.

By **RICK VAHAN**

135 Ridge Avenue
Newton Centre, Mass.

The last meeting of 1959 had an inter-council flavor with Will Jacobs, of Hartford, president of the Connecticut Council and vice-president of the Underwater Society of America, attending.

Will had been assigned by the Underwater Society of America, following an emergency meeting in Chicago, to check the validity of the Massachusetts Council as a representative organization. He reported "with great pleasure" the fine cooperation he received from member clubs when he checked the matter under investigation. He predicted the Mass. Council would "be as big or bigger than my own council by next June. We look for some fine work from you people," he said. "And we hope to learn a few lessons in the matter of dealing with state legislative problems."

Jacobs referred to the report of the Council's legislative committee which spoke before him. The report was given by Dick Myers, Council president; Atty. Albert G. (Gerry) Tierney, legislative counsel; and Walter Feinberg, public relations counsel. They told of meeting with state conservation officials and a representative of the Atlantic Lobstermen's Cooperative. The cooperative announced plans to file legislation that would prohibit taking of lobsters by divers and would raise the lobster license fee 500 per cent to \$25.

The committee then announced part of its 1960 legislative program. This included: —Separate commercial and sporting license fees costing \$25 and \$5 respectively. Either would be available to divers. And all license fees would be designated specifically for research on lobsters. —A bill legalizing the taking of striped bass by spearfishermen. At present stripers may be taken only with hook and line in Massachusetts although neighboring New York and Rhode Island permit spearing by divers. Jacobs commented he hoped his council could learn from this how to legalize spearing of stripers in Connecticut.

Nominations for 1960 Mass. Council officers were completed at the meeting.

Prior to nominations, the Council announced acceptance of the Marblehead Underwater Group into the Council. The group is led by one of the nation's top divers, James F. (Jim) Cahill, who was the subject of a Personality Spotlight in "Skin Diver" a few months ago.

The MUG's (they're really a pretty decent group) already boast a sturdy clubhouse at water's edge on Salem Bay, complete with diving gear, divers' surfboard, space heater and cards—the last for cold, dark nights.

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WASHINGTON COUNCIL OF SKIN DIVING CLUBS

By Richard Klein
18622 26th West
Aldewood Manor, Washington

At the December meeting it was reported that the Canadian border has been closed to spearguns. All divers must leave their guns at the custom station. The Council has drafted a letter to the Canadian emigration authority on this matter. This is a blow to competitive divers on both sides of the border, as a great many meets are enjoyed in both countries each year.

Officers for 1960 are: Bill High, president; Jerry Brown, vice-president and treasurer; and Barbara Boling, secretary. Bill High has made arrangements for a permanent meeting place of the Council. From now on the Council will meet every second Friday at the University of Washington School of Fisheries Auditorium, located on the ship canal by the Show Boat Theater. Not only can we use the auditorium, but will have access to their library and specimen collection. I certainly hope the University will feel free to call on us for any assistance we can render.

King County Sheriff's Divers—At the last meeting of the Sheriff's Divers elections were held with Chuck Fendrick elected president; Carl Hove, secretary-treasurer; and Bill Mertz, delegate to the Washington Council.

It has been noticed that there is a definite increase of shark in the Elliott Bay area of Puget Sound, with the largest congregation near the canneries on Seattle's waterfront. Most of them range from six to eight feet.

Puget Sound Blackfish—Reporter Dick Klein—Club diving activity has been held to a minimum because of poor visibility caused by flooding rivers and streams emptying into Puget Sound. Bob Hill, Jerry Brown and Dick Klein journeyed to Whidbey Island where we found fair visibility but few shooting size fish (10 lb. and over).

Jim Blanchard has been named to a new post in the club, that of "diving coordinator." Jim will have all diving information on who is going where during the week.

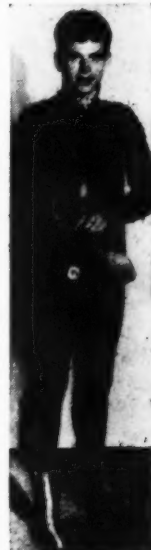
Boeing Sea Horses—Reporter Barbara Boling—The 1960 club officers are as follows: President, Donald McChesney; vice-president, John Miller; treasurer, Herb Leake; secretary, Barbara Boling.

Seven of the members spent Thanksgiving weekend diving at San Juan Island. Bill Huckins, who runs a charter boat for divers out of Davey Jones Locker at Friday Harbor, took the divers out to Shaw Island where they enjoyed some excellent diving.

On December 13 an all day boat cruise was held on the 70' Silver Swan of Seattle. The day was spent at "The Sisters" in Hoods Canal. Thirty-five pounds of filleted ling cod were donated to the Home of the Good Shepard, a children's home in Seattle.

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326F Black Stripping.....	.10	329F 1 quart Black.....	3.45
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each		330YF 1 gallon Yellow.....	16.15
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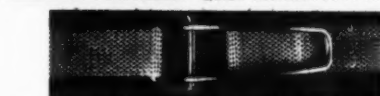
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By JIM KEENEY
415 Clifford Street
Detroit 26, Michigan

The MSDC, in viewing the year, in retrospect, look upon the Regional AAU Spearfishing Championships at a private lake near Dexter, Mich., and the Treasure Hunt and Compass Course competition at Higgins Lake as two of the Council sanctioned events which interested divers the most. The Council, however, had other activities during the year which were greatly accepted by the members: The Council Spearfishing Championships at Sunshine Beach with the Brighton Barracudas winning top honors and the innovation of the Council's Underwater Angling Contest at Higgins Lake. The Angling Contest, we believe, is the first of its type to be held by any diving organization. The contest was divided into two phases: snorkle and scuba, allotting a time limit of one hour for the snorkle and 45 minutes for the scuba segment. The divers entered the water in teams of three, "armed" with their favorite fishing poles and reels. The winner's trophy went to the team with the greatest total weight, not to exceed the State Game Laws. Honors in this contest went to the Ford Seahorses Diving Club of Dearborn, Mich.

Diving teams from the Council presented exhibitions at the Greater Michigan Boat Show and the Sportman's Show. The basic theme of the demonstrations was skin and scuba diving safety with an emphasis on the Divers Flag.

Plans are being made for the 2nd Annual "Skin Divers Ball" to be held in March. Date and place will be announced at a later time. Highlights of the ball will be the awarding of the "Diver of the Year" trophy and installation of new Council officers.

Bubblers Diving Club of Michigan—Reporter Andie Griffing—The ballots are in, the votes have been tallied, and we now take pleasure in announcing our officers for the year 1960: Don Brasseur, president; Bob Mortsfield, vice-president; Pat Connelly, secretary; Andy Pietowsky, treasurer; Ernie Ruppert, membership and Andie Griffing, chairman of the board. The Club extends a hearty "well done" to the outgoing officers and congratulations to the new officers.

Dolphin Diving Club—Detroit—Reporter Tom Sloan—Our present membership is 48 divers. Of these, 22 have qualified at 100 ft. or deeper and proudly wear gold medallions which attest to the depth they have reached.

Last August the club journeyed to Alpena, Michigan, to dive on the SS Monrovia which sank in June, 1959, after a collision with the Canadian ship Royalton. The ship lies in 140' of water and is in an upright position. Divers were down about 20 minutes when rough weather forced a

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AMERICAN CANCER SOCIETY

MICHIGAN (Continued)

halt to operations. Two future expeditions were planned but were cancelled because of bad weather. The club would like to thank Tom Brown of Alpena for assisting us during the operations and locating the wreck.

Ford Sea Horses—Dearborn—Reporter Dick Metzler—On January 8, 1960, the Ford Sea Horses began their 4th Annual 6-weeks skin diving course. Thirty-five students are enrolled.

While diving in a quarry near Monroe last November, club members Ed Murphy and Lloyd Neal found a number of new portable sewing machines. When the machines were turned over to the police it was learned that they were part of the loot taken in a recent warehouse robbery.

Viking Diving Club—Detroit—Reporter Fran Kelly—The Viking Diving Club organized in September, 1959, with seven members, and in five short months have increased to 22 active divers. We meet every Tuesday at the Lincoln Park High School pool and encourage interested persons to drop in for free instruction and introduction to the sport.

In October, we made our first cold weather dive at Marine City, Michigan, on a ship which sank approximately 20 years ago. The water was cold, about 45 degrees and visibility was poor (five ft.). Many divers gained valuable experience in handling themselves in a strong current.

Gasco Scubaneers—Detroit—Reporter Jim Keeney—The Scubaneers held their first cold weather dive of the season on November 15 at Monroe Quarry. The air temperature was 28° while the water temperature was a warm 32°. Visibility was not exceptional. The newer divers gained considerable experience in the use of exposure suits.

The diving team of the Scubaneers presented a diving exhibition at the Detroit Yacht Club on November 22 to approximately 115 people. The program was well received, and the divers and their wives were invited for dinner and an evening's entertainment, courtesy of the Detroit Yacht Club.

Battle Creek Aqua Club (Sub Norms)—Reporter Lloyd Sanders—Election of officers for the coming year was held at our November meeting. Officers are Sherm Schott, president; Lloyd Sanders, vice-president and treasurer; Joe Roen, secretary; Al Sharp, corresponding secretary, and Ken Mayo and Phil Thayer, executive committee.

A delegation from the club was sent to the Governor's water safety committee meeting. The purpose of the meeting was to get the various sportsmen's groups together to discuss water safety, so laws can be drawn up to make the lakes and streams safe for all.

Louisiana . . .

Sea Tigers—West Jefferson—Reporter Valence Rudolph—Members of the Sea Tigers would like to thank Vincent Giaise for all the aid he has offered our group. He has placed his boat, photographic equipment, diving gear and swimming pool at our disposal. He aided us in obtaining a compressor and has spoken encouragingly of our sport to commercial and sport fishermen in our area.

We are truly grateful to Mr. Giaise and agree that he is definitely a skin diver's friend.

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By GENE PARKER

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Send only stories for NEW YORK NEWS to Gene Parker, Scotia, New York, (there may be a delay of months if mail is mis-directed).

Third Annual Trophy Dinner Dance of the Empire State Underwater Council, Inc., was held at the Ideal Spot (that's the name of the place and at the same time a description).

The program included presentation of awards for the Empire State Spearfishing Championships. First place trophy went to

the Long Island Dolphins (Central trophy and Council Perpetual trophy), second place Aquapanel trophy to the Manhattan Skin Divers, third place Harvey trophy to Long Island Skin Divers Inc., Richard's largest individual fish trophy to Herb Rakebrand, L.I. Dolphin Perpetual East Coast Championship trophy to Long Island Dolphins. Council annual awards in photography were presented by Murray Seliger, chairman of the photography judging committee. Largest individual fish award was presented by Artie Illiano, chairman of the Competitive Skin Diving Committee and the achievement award by Don Marchese.

The dinner dance was a great success both entertainment-wise and financially. It made a \$700 profit.

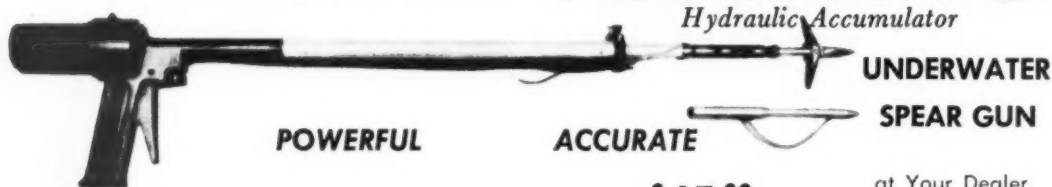
Officers for 1960 are Don Marchese, president; Al Boehm, vice-president; Charles Dunn, secretary; Murray Seliger, treasurer, and Don Shearer, Roy Keiser and Graham Snedicker, directors.

This Suggestion May Strengthen Council—Under consideration is a move to unify by decentralization. Let's put the above statement under a magnifying glass. At present, our governing board is preponderantly located in and near New York City. Upstate meetings are intended to offset this tendency. The expense of phone calls, long distance travelling, correspondence all boils down to one basic weakness inherent in our geographical setup—communication difficulties.

The suggestion is to set up three Council areas. Each area would be an entity, but would send directors to a central governing body on a per capita basis. The areas might be Metropolitan New York, Schenectady-Syracuse, and Rochester-Buffalo.

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passed with flying colors. (It sounds like a tough course.) Next proposed certification may be in Schenectady area. (I hope.)

Dutchess Divers make good winter-time use of the Newburgh Y.W.C.A. indoor pool. By the first warm days of spring, the club is in top shape for the summer's diving. So reports Tom Kelly. (The year's Council awards certainly attest to that!)

Suffolk Sub-Mariners — We would like to let the other clubs and various other councils know about our underwater sports publicity campaign. Under the aegis of officers, President Ernest Craigwell and Vice-President Charles Jehle, we are directing our methods to all media of public information. We recently extended an invitation to the commentator at the local (Riverhead, L. I.) radio station to attend our November business meeting. The result was extensive air time devoted to his excellent discussion of our problems and our genuinely sportsmanlike attitude.

We have been contacting newspapers and public organizations offering a lecture and demonstration program to all seriously interested parties. During the past summer, we staged exhibitions at the local scout camp and were very well received. In addition, we conducted weekly training sessions in basic techniques open to the public with the only prerequisites being an interest and a desire to learn.

If any other clubs have similar programs underway to serve the good of the sport, we would welcome their suggestions, comments and constructive criticism.

Addendum

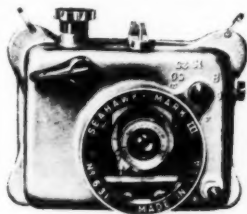
Well . . . that's the ball of wax for this time. Remember, you don't HAVE to send news straight to me. You can send it to SKIN DIVER direct, where it will get

added to NEW YORK NEWS automatically. Before this reporter crawls back under the ice, let me add—you didn't see NEW YORK NEWS for a couple months recently because the NEWS never arrived at SKIN DIVER offices. I figured it would be printed the next month, so no more NEWS was sent. Three months went by before we got straightened out again.

Bottom Scrapers — Horseheads—Reporter Richard Chase—We have about thirty active members in the club. We will not accept any members until they have either passed the adult education 15 week course or have passed a club written and pool test.

Our season divers dive year round in the Finger Lakes of New York while our new divers practice winters in the pool and dive the lakes in the summer.

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(Continued from Page 99)

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NORTHEAST NOTES

By CAL CALHOUN

Northeast Council
of Skin Diving Clubs
P. O. Box 225
Fairhaven, Mass.



I don't want anyone to get the impression that our good friend Brad Luther has gone to the happy diving ground. Brad is by no means retiring, actually he intends to do a great deal of research and work on his new book dealing with ship wrecks along the New England coast. The divers in the northeast area will always be indebted to B. W. Luther Jr. for the excellent job of reporting he has done.

The fourth quarterly delegates meeting of the Northeast Council of Skin Diving Clubs Inc. was held at the home of the Bay State Aqua Club, Inc. (Cornelius Compressor Co.'s Grand Award) on Nov. 29, 1959. This was the second largest delegates meeting in Council history. Nominations and elections were the main course with the following officers being chosen to lead the council for the year 1960: president, Frederick R. J. Calhoun, South Shore Neptunes, Inc.; vice-president, Joseph Gallant, Maine Marine Alpine Club; secretary, Howard Vera, Semi Panic Club; and treasurer, Eli Nix Elgin, South Shore Neptunes, Inc.

Two problems face organized diving clubs in the Northeast area. One, we are sloshing about in a great financial swamp. The First Annual National Convention of Skin Divers (which launched The Underwater Society of America) left the Northeast Council of Skin Diving Clubs, Inc. deep in the cellar of debt.

The second of the two problems is one of a question of strength. Our guard is down around our ankles. The purpose for the formation of an organization such as ours is not to run tournaments, or to have meetings, or to publish a Newsletter . . . these are secondary to the prime purpose of strength in numbers and unity.

Perhaps over the course of the next year I may get to see all the member clubs of the Council . . . and others. All I need is an invitation (preferably for a Friday or Saturday night).

An important item was brought before the delegates at the fourth quarterly meeting. The Northeast Council's Judge Advocate, Dort Bigg, acting in behalf of the

organization as its legal agent drafted a letter, which has been posted, to the leaders of the Underwater Society of America. In brief, which doesn't do this excellent letter justice, Mr. Bigg clarified for the Society, the position of the Northeast Council regarding our membership status. He stated in so many words that it is not conceivable that a group which laid the ground work for a national organization should be banned from membership in that same society. The delegates were wholeheartedly behind the officers of the Council in their stand regarding the Society.

The Council's tournament system is enjoying a much needed change. Gerald F. Comeau has accepted an appointment to the post of Tournament Director. He will handle all matters pertaining to underwater contests . . . locations, types, trophies, etc. Mr. Comeau's home address is 6 Minot St., Stoneham, Massachusetts. Phone ST-6-2198W.

Our 1960 tournament season was off to a fast start with the sponsorship of the popular winter contest held yearly at Nubble Light, York Beach, Maine, on January 24. A full accounting of this frigid fracas will appear in next month's Notes.

The Northeast Council's Diver and Instructor Certification Program is a giant step in the right direction. Divers may become certified as Second Class Divers after first completing the necessary qualifying tests, on a club level. After attaining a second class rating, a diver is then qualified to petition for a First Class rating . . . this is also completed on a club level. Master Diver Certification, the top of the list, is handled by the Council through its Diver Certification Director and Board of Examiners. It will be the aim of the Council to pattern tournaments about this program, holding meets for novices (uncertified) second class, first class, and Master Divers. Individuals interested in this program, and instructors wishing certification should contact John K. Whelan, Diving Certification Director, 24 Seabee Street, Bedford, New Hampshire.

Attention . . . any divers desiring to go to the next Convention (it's being held in Houston, Texas) by plane, for the unbelievable low price of \$73.00 ROUND TRIP, contact N. W. Comeau. Wayne has made arrangements to charter a 100 passenger American Airlines Super Constellation. We've got the plane . . . all we need is people, our kind of people . . . divers. You can hunt all over, but you won't be able to beat this. Send your money (registered check or money order), to N. W. Comeau, P. O. Box 225, Fairhaven, Massachusetts.

I have had some interesting correspondence from Herb Jason of 59 Cushing Rd., Cohasset, Massachusetts. A lobster fisherman, he is also a very enthusiastic diver. Herb has stated that he is hotly opposed

(Continued Next Page)

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NORTHEAST NOTES (Continued)

to the proposed lobster law revisions as sponsored by the Atlantic Lobstermen's Co-operative which would eliminate skin divers from the lobster scene. Quoting from his letter "... I am against trying to stop you fellows from taking lobsters. The few lobsters you take amounts to nothing as compared to what we take." A lobsterman who dives ... who would know better than he, how much of a dent we (skin divers) have put in the market? If more 'bug' trappers would take up diving, I think our problems along this line would be resolved. 'Along this line', there is a group of divers in Massachusetts who have started the ball rolling down the right alley with some legislative action of their own. This group has the excellent advice of a fine legal mind and they have composed some Lobster Law revisions which warrant merit ... and support. It shouldn't be difficult for the Massachusetts clubs of the Northeast Council of Skin Diving Clubs to lend support, it's our duty to try. Any movement of this nature, which will affect all the divers in the state should not be attempted by a handful of men. I believe it is their duty to solicit assistance from every organized club. If you readers feel as I do, and you wish to make your feelings known in the right place, contact Walter Feinberg, 135 Ridge Street, Newton, Massachusetts. Phone LA 7-1386.

The idea is this. The only opposition to a Lobster Bill proposed by 'skin divers' would be voiced from State Representatives of Wards which bound the coastline (it is here that the Lobstermen have the most 'pull'). Lobstermen do not have any influence in the inland Wards of Massachusetts. (The inland sectors far outnumber the coastal sectors.) We, the divers, have organized clubs throughout the state who could poll more votes and favorable arguments for our Bill. All we have to do is contact the correct Representatives and apply the necessary pressure.

Kentucky . . .

Trouble Shooters—Louisville—Reporter Tom Ogle—Explorer Post 315 (Trouble Shooters) organized a skin diving team about this time last year. Since that time the Post has raised enough money to buy two diving rigs and a compressor. We have been on two dives, both on Lake Cumberland.

We are very interested in hearing from other teams around the country especially divers and clubs around Louisville who would be interested in forming a diving council in the Louisville area.

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CENTRAL CALIFORNIA COUNCIL OF DIVING CLUBS

By Marlene Strawn
15558 Wicks Blvd.
San Leandro, Calif.

Tons of beautiful but destructive starfish were plucked from the floor of the Bodega Bay area recently during the Cal-Cen Star Mop Contest, hosted by the East Bay Barnacles. Although the day was dreary, interested spectators crowded eagerly by the water's edge waiting for the contest to begin. When the signal sounded, fifty-four contestants turned their backs to the water and waded in backward, which promptly brought a delighted shriek of surprise to novice observers. Two hours later, the starfish parade began. Contestants emptied bags of countless tangled masses of starfish into tubs to be weighed.

Dick McCandless of the Sonoma County Reef Runners emerged victorious with a total catch of 107 lbs. Fourteen-year-old Denny Reed of McChellan Aqua Knights placed second, with third and fourth places going to Dick Asturias of the Panther Rod and Gun Club, and G. V. Dutcher, Reef Runners, respectively. Vivian Hague of the East Bay Barnacles placed first in the women's division by bringing in 4 lbs. of starfish.

Officials Harry Hague, Oscar Asturias, Ralph Asturias, Archie Waterbury and Jack Tees reported all profits were donated to the Cal-Cen competitive fund.

Installation of new Cal-Cen officers was held recently in Vallejo. New officers are Oscar Asturias, president; Harvey Bailey, vice-president; Archie Waterbury, secretary; Chuck Overfelt, treasurer; Marlene Strawn, publicity; John Tahti, membership; Dale Orr, legislation and conservation; Gene Dyer, research, and Marty Martellacci, safety.

Members of the Sonoma County Reef Runners sponsored an Invitational skin diving contest at Fort Ross which attracted 110 competitive divers representing 21 clubs. Divers competed on an individual basis rather than a team under AAU rules.

Harry Hague of the East Bay Barnacles took home three trophies as the result of the meet, one for an aggregate catch of 53 lbs., one for largest fish, and one for largest ling cod. Second place for aggregate catch was won by Roger Chung of the Mobv Dicks; third, Ralph Asturias of the Panther Rod and Gun Club; fourth, Dick McCandless, Sonoma County Reef Runners. Largest cabezon award went to Ralph Asturias, and largest rockfish was speared by Demsey Billey of the Monterey Peninsula Sunfish.

Iowa . . .

Atergatis Divers—Des Moines—Reporter John Kozek—We are members of an active club that donates its services 24 hours a day to the State Police. We have our own portable compressor and will fill tanks any time.

Our annual ice dive is scheduled for the first of the year when the ice is about a foot thick. The welcome mat is always out for other skin divers and we will be glad to correspond with any other clubs either in English or Spanish.

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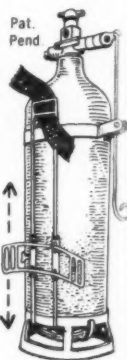
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MIDWEST DIVING COUNCIL

By MEL LILLIS
4545 Holmes
Kansas City 10, Missouri

Nine clubs answered the call for membership in the newly formed Midwest Diving Council, representing almost 300 members and four states. They include Kansas City Frogman Club, Inc., Kansas City, Missouri; Mid-County Scuba Club, Brentwood, Missouri; Centralia Skin Diving and Scuba Club, Centralia, Illinois; Deep Six Plus, St. Louis, Missouri; The Belton Belaines, Peculiar, Mo.; Bluegill Divers, Oklahoma City, Oklahoma; St. Louis Scuba Club, St. Louis, Missouri.

The Council is certain that there are many other clubs in the Midwestern area that are not affiliated with a council. Anyone desiring further information should contact the Midwest Diving Council, 4545 Holmes, Kansas City, Mo.

The first newsletter is being prepared for the membership. Included with the progress report is an extensive questionnaire which will aid the Council in preparing its first yearly calendar of activities, certified diver training program and diver instructor training, area-wide underwater recovery system, scuba and spearfishing competitions. Because of the many request from individual divers, a pamphlet, "Suggested Ideas on Forming a Diving Club" is near completion. The entire membership will have had a hand in writing it and it will soon be available for distribution.

The Midwest Diving Council, as are all the other Councils belonging to the Underwater Society of America, is quite proud of its membership. We would like to encourage all organized and individual divers to seek club, council and Society memberships. As we all know so well that only in unity is their strength.

Kansas City Frogman Club, Inc.—Reporter Mary Edith Lillis—Meeting the first and third Thursdays of the month during the winter has not curtailed club activities. Ten members completed and passed the Red Cross & YMCA Lifesaving course. A club dance, penny dive, icedive (sans ice) at the Jungle Pool in Warrensburg, Mo., scuba demonstration to the nursing students at St. Marys Hospital in Kansas City, Mo., (definitely enjoyed by the frogmen) and the showing of "Blue Continent" highlighted November.

December included a most complicated obstacle course in the YMCA pool, two more parties and preparation for the Annual Sports Show to be held in January. The long awaited Underwater Hunter Safety Corps course also steps into the spotlight January. More will be heard about this comprehensive and excellent training to be given by Jim Hays, our Public Relations officer.



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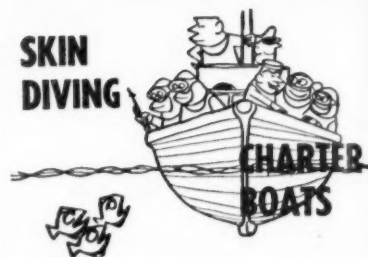
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